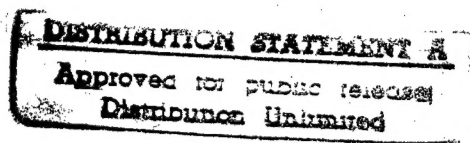


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14 March 1986

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East Berlin EINHEIT in German Vol 41 No 1, Jan 86 (signed to press 10 Dec 85)
pp 2, 96

[Summary of article by Prof Dr Helmut Koziolk, member of the SED Central Committee, director of the SED Central Committee's Central Institute for Socialist Economic Management, chairman of the economic sciences research council, member of the Academy of Sciences, GDR, and member of the EINHEIT editorial board; pp 12-20. A full translation of this article is published in this report]

[Text] Linking Science With Production

Implementing the new phase of the economic strategy compellingly necessitates a closer economic link between science and production. What objective measures must then be met? From which experiences, gained in the combines, must general rules be drawn so that, relying on basic research data, scientific-technical top achievements are to be attained and are swiftly converted into new products and technologies in being as well utilized economically as possible? What expresses the growing weight of the subjective factor in dealing with the tasks to be solved?

[Summary of article by Prof Dr Wolfgang Biermann, member of the SED Central Committee, general director of the VEB Carl Zeiss JENA Combine; pp 21-27. A full translation of this article is published in this report]

[Text] The Combine's Scientific Potential

Closely linking the combines' science and research potentials with their economic cycles has turned out to be a highly beneficial and efficient form for achieving scientific-technical top performances high in economic yield. Which experiences can the VEB Carl Zeiss JENA Combine furnish in this regard? How, by using the advantages of socialism, are the potentials of the science institutes, the universities, and of socialist economic integration being exploited and the opportunities inherent in mission-related research being utilized?

[Summary of article by Prof Dr Norbert Langhoff, director of the Center for Scientific Equipment Construction, Academy of Sciences, GDR; Prof Dr Harry Maier, deputy director of the Institute for Science Theory, History and Organization, Academy of Sciences, GDR; and Dr Klaus Meier, associate at the same institute; pp 28-34]

[Text] Research Techniques Striving for Top Positions

While seeking top positions in basic research and the mastery over and swift economic conversion of key technologies, efficient research techniques are becoming increasingly important. Buying them on the world market would mean getting pre-programmed for lagging behind. All the greater are the efforts that are needed to produce modern science equipment ourselves. How can research institutes and combines expand, coordinate, and still more efficiently use their opportunities for it?

[Summary of article by Harry Groschupf, GDR deputy minister for University and Technical School Affairs; pp 35-39. A full translation of this article is published in this report]

[Text] Technical Schools--Centers of Cooperation Between Science and Production

What are the Technika? How do they function as centers for the economic linking of science with production? Examples demonstrate how in the Technika, especially in basic research, the potentials of the universities and of the combines work together, how they contribute to hastening the conversion processes, and how the unity of teaching, research, and practice is brought to realization there.

[Summary of article by Prof Dr Heinz Vosske, head of the central party archives at the SED Central Committee's Marxism-Leninism Institute; pp 40-46]

[Text] Wilhelm Pieck--A Life Devoted to the Working Class and All the People

The name and struggle of this outstanding leader of the German and international workers movement embody the best traditions of the revolutionary German workers movement and the rise of the workers class from a suppressed and exploited class to the one that exercises the power in our country. As a trustee and leader of his class, Wilhelm Pieck's way through six decades of resolute struggle against imperialism and war, and for peace and socialism, led to his becoming the top representative of the GDR, in which that became real for which generations of the best parts of our people had been struggling.

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LINK BETWEEN RESEARCH, INDUSTRIAL PRODUCTION VIEWED

East Berlin EINHEIT in German Vol 41 No 1, Jan 86 (signed to press 10 Dec 85)
pp 12-20

[Article by Prof Dr Helmut Koziolk, member of the SED Central Committee, director of the SED Central Committee's Central Institute for Socialist Economic Management: "Linking Science With Production"]

[Text] Organically linking the scientific-technical revolution with the advantages of socialism, made to stand out in our party program as a characteristic of the developed socialist society, is the principal task of the economic strategy for the 1980's which was issued by the 10th party congress. As in the new phase of implementing this strategy it comes down to making intensification comprehensive and creating stable long-term foundations for it, that precisely makes the linking of the advantages of socialism with the accomplishments of the scientific-technical revolution all the more compelling. The whole mental and material potential has to be mobilized for it and has to be aimed, in particular, at reaching higher efficiency through new technologies and new products. To go on and trim production consumption further in the future through technological progress and the upgrading of production is a decisive prerequisite for increasing net production and net profit as a profit for socialism in a way that is indispensable for carrying on the principal task policy in our country. All phases of the reproduction process and its links--starting from science and technology--are altogether crucial for reaching this necessarily higher end result. It underscores the need to accelerate the whole economic cycle and fashion it along the principle of refining.

Implementing this strategic objective under current and future conditions--as the Central Committee pointed out at its 10th session--calls for a close mutual penetration between science and production¹ and requires and makes possible their economic intertwining to an unprecedented degree.

The need for such close linkage comes from the rapid development of the productive forces, further accelerating at the international scale, with which one has to keep in step to reach the necessary level of labor productivity. That need grows further due to the internationally indicated trend toward a scientific penetration of production. In conformity with these objective requirements, the 10th Central Committee session referred to important key technologies marking the direction and rate of scientific-technical progress and, over long-term, the tendencies of productive forces development. Coping

with them determines the scientific-technical and economic level of the economy and broadly affects the entire economic and social development going on in the process of the continued shaping of the developed socialist society.

Combines--The Most Effective Form of Linking Science With Production

The results of our socialist planned economy, given much attention also beyond our national borders, indicate that with the combines in industry, construction, transportation and communications we have all it takes for economically linking science with production. "As our turning to intensification worked so well, the 'secret' of our success was, precisely, due to the fact that in the combines themselves significant science and research potentials exist that are directly linked with the economic cycles in those economic units."² While previously science and production in part still ran side-by-side, that was overcome by the formation and further consolidation of the combines.

A high economic responsibility has today been assigned to the combines, which have become the spine of the planned economy in our country, functioning in conformity with the principles of democratic centralism. They can meet that responsibility because their position in the economy allows them to cope through their capacities with complex economic projects. "The key question here is the linking of science and technology with production and, above and beyond that, with sales and the economic revenue achieved."³

Comprehensively intensifying the reproduction cycle, from research to sales--that is the task the combines have to cope with to produce most efficiently the most high-grade products that are needed in conformity with the state economic demand satisfaction plan, for supplying the population with consumer goods and for export. For that they have grand mental and material potentials. They make it possible for them to shape their reproduction in a complex and far-sighted manner in conformity with the high economic performance and efficiency requirements, and this through close cooperation with their cooperation partners in the economy and their partners in the CEMA countries, particularly in the USSR. Longtime experience has shown that the combines are asserting themselves as the most effective form for linking science with production. That implies for basic research in the academies and university affairs largely to be focused, through the research cooperation, at the requirements for the economic and technical-technological development of the combines. Based on basic research results--brought about precisely by way of the commissioned research financed by the combines--the combines can set the conditions for having scientific-technical top achievements rapidly transformed into production and sales-effective products, procedures, and technologies and for making a good economic use of them.

The basic task in resolutely converting the party's economic strategy as a creative application of the Marxist-Leninist reproduction theory, on the solution of which we should concentrate even more in getting set for the 11th party congress, lies in making the combines' reproduction process so efficient and flexible that a high type of production upgrading is ensured by important economic effects. The decisive chain link, it turns out, has been the linking of science and technology with all the factors of the intensively expanded

reproduction in the cycle of the combines. Focusing on this chain link attests to the creative application of the Marxist idea that with the development of large-scale industry the production of real wealth increasingly depends "on the general state of science and the progress in technology, or on the application of this science to production."⁴

Marx, as one knows, through his cyclical theory set the elemental scientific basis for intensification. Doing so, he offered general statements on the effectiveness of the social labor used in the various reproduction phases and their connection, which are exceedingly valuable for socialist economic management activity in our time.

What he said about shortening production and circulation periods therefore warrants our full attention today as, after all, under the aspect of the hurried development of the productive forces, the time reduction in the science-production-sales cycle is gaining ever increasing importance. "The main way to trim production periods lies in increasing the labor productivity,"⁵ Marx writes and then, extending his idea, at once arrives at the crucial question, the economic efficacy of science and technology by being linked with the production processes. "The newly discovered procedural methods are reducing at relatively low costs most lengthy processes of the past to a minimum."⁶

Engels likewise repeatedly points to the close link between science and production. While in his introduction to Marx' "Wage Labor and Capital," he called the inventions and discoveries, ever more rapidly substituting for one another, the cause for the "increasing productivity of human labor,"⁷ he underscores in a different context that the "intellectual element of an invention belongs among the production elements."⁸

New Measures for Linking Science With Production

If the 10th Central Committee session, looking ahead to the 11th party congress and the years ahead, set the task to the effect that "important innovations are needed that can only be produced by basic research ranging into the far distant future,"⁹ that then establishes new criteria for linking science with production.

New dimensions are involved of the economic entwining of the combines' important science and research potentials with those of the Academy institutes, the universities, and the colleges and technical schools, as nearly every other scientist and researcher of the Academy of Sciences and of the colleges--as Comrade Guenter Mittag affirmed at the 12th session of the GDR's People's Chamber--works together with combines through economic contracts.¹⁰ A high economic effect of science and technology and their organic linkage with production compels the unity between the development of new products and procedures, or of technology development, to an unprecedented extent. That implies turning their in-house rationalization means construction into the most up-to-date technological centers. New qualitative requirements arise thereby also for the production organization, from most suitably shaping the product and production profiles via ensuring high flexibility all the way to production continuity.

The linking of science with production does not yet close the cycle, however. The combines' responsibility ranges to the selling of the products, to getting paid for the exports transacted. That can only be coped with if targeted measures are taken already in the production preparation process about entering the markets. Hence, the requirements placed on management organization are also going up: Reducing the cycle demands more object- or product-related management; demands from the outset that the personnel in science and technology, production, sales, and customer service are brought together; that affects the use of lead enterprises and the organization of product team work. New demands are also being placed on modern management machineries, from the traditional ADP systems to closed CAD/CAM solutions and information and communications systems altogether.¹¹

Growing Performance Requirements Go Hand in Hand With an Improvement in Working and Living Conditions

For all that, not only the objective reproduction factors are the ones that determine the economic effect of science and technology throughout the total reproduction cycle; rather, human activity, the people's training and skills, their experiences, and their targeted initiatives in socialist competition have as much an impact on the outcome as has the level of management activity.

A crucial prerequisite for a closer linkage between science and production, it turns out, is a high degree of flexibility on the part of the working people, i.e. their willingness and capability for a planned change of labor tasks, of jobs, work collectives, the place of work, and the working hour arrangements. Experiences thus far have shown that the product turnover combined with the introduction of new procedures, modern technologies, and progressive scientific labor solutions makes new demands on the working people's political attitude, technical skill and occupational know-how. All the greater is the sense of responsibility with which in good time all must be done to get set for training that becomes necessary, for combining occupational training with adult education and, if necessary, for introducing scientific labor organization measures. It is party policy to connect resolutely every step in the further implementation of the economic strategy toward comprehensive intensification always closely with improving the working people's working and living conditions. The position taken by the SED Central Committee secretariat on the Spremberg SED Kreis Management report confirms: "Decisive for solving all economic tasks is and remains man with his abilities, interests and needs."¹²

This link between science and production, always oriented to the well-being of man, according to plan, and not by any means on behalf of just one enterprise, one combine, finds its stable basis in our socialist planned economy. That expresses the concrete advantages of socialism compared with capitalist society, where noteworthy results in productive forces development go hand in hand with massive unemployment and hopelessness, especially among youth, a hostility to technology among broad public circles, nourished by anxiety about the future, and other ordinary realities of the working people, branded by profit greed. The more successfully we advance on the basis of the functioning system of our socialist planned economy with our stable and dynamic economic development, the more clearly and powerfully will these advantages take shape.

Which Combine Experiences Are Worth Generalizing?

A basic condition for good results lies in managing and planning the science-production-sales cycle, from target-directed basic research via applied research and development all the way down to its transfer into production by way of a uniform economic objective. That makes possible focusing on the economy as the point of departure and the terminal in scientific-technological work and rapidly translating the economic potentials inherent in the key technologies into economic productivity and efficiency growth. The combines achieve top performances when they open up and make effective basic research results through close research cooperation with science institutions of the Academy and of university affairs. The important scientific-technological results of recent years in lignite refining, in microelectronics and its use, in the construction and assignment of industrial robots, in the development of new procedures in vortex layer technology, surface refining, and the manufacture of new pharmaceuticals would have been unthinkable without the close linkage between science and production.

Such remarkable achievements presuppose that the combines with their significant intellectual and material potentials are in the position to take up themselves and economically utilize the accomplishments of the scientific-technical revolution and bring an active influence to bear on speeding up the scientific-technical processes.

It turns out to be necessary, first of all, that the general directors always meet their high personal responsibility to using the accomplishments of the scientific-technical revolution. It means that they will fully adapt their personal management style and the whole management system to it and manage the economic cycle as a whole, with production preparation, implementation, and realization meshing smoothly.

The general director of the Schwarze Pumpe Gas Combine e.g. made the development of the gas pressure gasification technology his own business and made sure through his dedication that this technology was developed rapidly--gauged against international standards. To him that meant mastering the requirement in substance, finding the most efficient economic solution, organizing research cooperation with institutes in the Academy of Sciences and with GDR universities and a Soviet research institute, opening contacts with the principal cooperation partners, and coordinating in good time the achievements expected of him.

If in the chemical plant construction combine top achievements with a high economic impact were brought off at short shrift and quite as the customers had specified, it was because the general director always had found in that a focal point of his work. Even his refinement conception ensures the economic link between science and production. Proceeding from the economic requirements for performance and efficiency development, it contains tasks for the development and use of key technologies, including the complex application of microelectronics, robot technology, and CAD/CAM technology. This involves tasks in basic and applied research, in the development of new technological procedures and products, and in improving the production level.

For effectively linking science with production it is important for the combines to have far-reaching conceptions for developing their production profiles, derived from the state of development of techniques and technology in the field concerned and from the market requirements.¹³

Secondly it is necessary that the capability of one's own scientific-technical potential is constantly heightened, with one's research cooperation included, to keep the economic linkage between science and production in line with the high international rate of production upgrading. The use of CAD/CAM technology, modern automated research techniques, greatly helps accelerate development and design and cut down the expenditure of live labor. In the VEB lathe plant, Leipzig, that way the time needed for design dropped from days to hours; the original goal to save 10,000 hours in designing last year was already reached in July.¹⁴

Great importance in this connection attaches to the construction and expansion of branch-specific basic research--especially in research-intensive combines. As the experiences have taught in such combines as microelectronics, Schwarze Pumpe, chemical plant construction, the pharmaceutical combine Germed, or the Hermsdorf ceramics plants, they have to make their own contribution to basic research to reach a degree of upgrading for the production of their branch that rates as high even in terms of international standards.

The combines' building up their own capacities turns out to be a condition for effective research coordination, oriented to economic points of view, with Academy and university institutions. In the chemical plant construction combine, in the pharmaceutical combine, and in the EAW Combine Berlin, e.g., especially good results of such research cooperation were achieved by means of the following steps:

- The combine's general director, with the R&D director attending, confers regularly with the responsible managers of the principal cooperation partners--e.g. the department chiefs of the Academy and the rectors and deans for natural science research at the universities and colleges--on the basic research tasks assigned;
- the targets and requirements for the basic research results needed are worked out in close concert;
- the economically justified measures of the refinement conception are--via the tasking workbooks and the annual science and technology plan--turned into annual commissioned research;
- clear deals are made on how the tasks assigned are to be coped with, by way of a division of labor, by the contract partners and the combine's own potential;
- personnel is exchanged between the combine and facilities of the contract partners;
- the combine allocates material and financial means to strengthen the contract partner's research base and set up joint laboratories and technical seminars at the university or college concerned; and
- the combine finances the basic research.

Thirdly, one must develop the products and the procedures and technologies needed for their manufacture in unity. Thereby an optimum utilization of scientific-technical data is obtainable by way of production upgrading.

So one ensures a design of new products that is consistently friendly to technology, rationalization, and automation and is shored up by a procedural and technological development borne by modern key technologies, which can then be implemented by largely using an extant equipment base which, mainly through modernization, becomes ever more efficient.

In the VEB dkk Scharfenstein, e.g., the enterprise director from the outset ensured the cooperation between research, design, and technology. The tasks transcending those sectors are coped with by a development collective made up of specialists of the enterprise together with important partners from outside the enterprise, all this on the basis of a tasking workbook. In the Textima Combine also such a method has proven itself and has seen to it--not last through the research cooperation with institutes in the Karl-Marx-Stadt and the Ilmenau technical colleges--that the unity of product and technology development was ensured.

The decisive chain link in bringing out scientific-technical results is the in-house rationalization means construction. It has become the foremost source, in many combines the decisive source, by which to meet equipment requirements. The expectations placed on it will always be fulfilled when, in its scope as well as in its internal structure, it is aimed at the application of modern technologies. In the air conditioning and refrigeration combine, e.g., it did meet that expectation. More than half of the rationalization means constructed there are equipped with microelectronic freely programmable or computer-based controls. This way the premises were set for an effective production of consumer goods on the most modern technological basis, and considerable economic results were achieved in the reconstruction and modernization of enterprise departments.

Fourth, the point is to combine the scientific-technical work closely with the combines' sales activities and with market research to get a rapid economic use out of the science data. The objectives for research on developing new products in such combines as VEB Carl Zeiss JENA, ship building, and TAKRAF are derived from the long-range market requirements, future customers' needs, and the basic tendencies in scientific-technical development.

When development projects begin in research, the sales sector starts preparing the market. That made a close cooperation between those two sectors necessary. That created conditions where products meet the future customer demands and the market gets prepared for selling products in high numbers through applied research, customer counseling, and sales organization. At the same time, this close cooperation is prerequisite to responding more quickly to specific customer preferences and having the combines exercise an active bid policy.

The Growing Weight of the Subjective Factor

For all intents and purposes, it is the subjective factor that controls the results of the economic linkage between science and production. This, as coping with the demands of the new phase of the party's economic strategy altogether, calls for "the communists' combative positions, a political motivation for a high performance contribution and expert information on the part of the working people and their being drawn into solving the tasks from the outset, coupled with highly skilled management activity."¹⁵

Reaching the top in crucial areas, ensuring a mighty economic growth through applying high-tech, especially the key technologies, and closely linking science with production call for developing creative restlessness, risk readiness, target-directed thinking and committed action, a fighting spirit and creativeness, so that this also has become a major concern of the political-ideological and the organizational work in the party organizations.

It is of course a complicated process in many ways to thrust into scientific-technical virgin territory, explore what is not yet known, make new data most rapidly economically useful, and reap high rewards. We must resolutely leave behind what is obsolete and strive for pioneering achievements in science and technology. All the more purposefully one must create the kind of working climate in all sectors concerned that is receptive to all innovations and induces every associate to adopt high standards for his own performance and self-critically gauge it, time and time again, against the highest standards. That also is a favorable climate for making the performance principle prevail, which is indispensable for achieving the utmost. Adequate information, comradesly competition, and consistent performance rating enhance the working people's motivation and are, moreover, of an importance of principle for confident, creative work and an atmosphere that fosters a dedicated commitment.

Drawing the young generation of scientists through their target-directed assignments in the youth research collectives into research affects this process positively in several respects. They are the ones, after all, who have the most excellent qualifications for meeting the new scientific-technical requirements. They have studied the latest at their universities and colleges, are urging the application of it, are approaching new tasks without prejudice, and wish to meet their practical test in a hurry. In the last 5 years, more than 70,000 graduates from technical and natural science departments have started jobs in the economy. Promoting the abilities and dedication of these young workers and, especially, bringing them to full effect through involvement in youth research collectives is a most responsible task for the general directors and enterprise directors. Those have good results to show for who sign accords with youth research collectives, motivate them to cope with important tasks, appoint prominent scientists as custodians for youth research collectives, assign projects to them that they will handle under their own responsibility, see to it that the composition of the youth research collectives is interdisciplinary, and ensure an effective moral and material incentive for performances fulfilled.

The effectiveness of the intellectual potential largely depends on properly concentrating capacities at the correct proportions, organizing an effective assignment structure for the qualitative labor capacity, and connecting with each other stable and flexible forms of cooperative work between science and production. That ranges from a solid cadre requirement planning to skill-related assignments and rational labor organization all the way to motivating and promoting the creative cadre. Economic culture demands the sort of organization where the knowledge and experience available are used fully and a rapid adaptation to a high rate of production upgrading and to the introduction of key technologies is ensured. High cadre flexibility and their willingness to keep learning are wanted more than ever.

For the educational lead, produced well ahead of time, to become fully effective it is necessary that together with furnishing the knowledge appropriate work attitudes also are shaped and reinforced. High demands are made on the working people's work morale, their discipline, integrity, and initiative, on reliability and a fast reaction capability, and on conscientiousness and a willingness to cooperate. Psychological barriers that may at times exist can more effectively be surmounted by providing target-directed and differentiated training for the technicians, specialists, youths and chiefs, and the assembly and operations collectives.

Positive work attitudes significantly depend on there being given the proper attention to a comprehensive involvement of the working people and the improvement of their working and living conditions according to plan. Experience has shown also as essential for the performance willingness, which greatly depends on political motivation and the insight into economic necessity, however, correlated regulations in taking care of workers' needs, commuting, and medical care in the territory, as it conforms to the needs of the working people. It has been found to be most beneficial if together with new technology progressive changes are brought in as to the character, substance and organization of labor, so that a more high-grade work is required and routine operations, monotony, and one-sided burdens are pushed back.

The close linkage of science and production in the combines implies that precisely this side of the unity of economic and social policies receives constant attention and is effectively applied through comprehensive cooperative efforts among research, project planning, assembly, and users' collectives.

New Demands Made on the Conducting of Competition

The effects of the scientific-technical revolution, which come to prevail through a closer economic linkage between science and production in the combines, affect fundamental aspects in conducting socialist competition, including the innovator movement. The deeper meshing of the phases of the reproduction process changes the criteria and intensity of cooperation and calls for an increasingly more complex manner of conducting the competition. This also has repercussions on the rate at which standards, performance parameters, and norms, basic as they are to rating competition performance, have to be changed. Precisely the innovator movement is what most vividly expresses the linking of science with production in socialist competition. The increasing penetration of production with scientific-technical progress already indicates today that the innovator movement in socialist competition deserves a new qualitative role. The scientific-technical potential of our economy is put to effect by the circa 200,000 highly skilled cadre working in science and technology directly and the creative work of all the working people, notably the 2 million innovators.

Especially through the innovator movement R&D data are effectively adapted to concrete production conditions. These adaptation processes are increasingly becoming the main field of socialist cooperative efforts as between R&D cadre, specialists, master foremen, and engineers. Innovators furthermore have the tasks to introduce innovator solutions into the existing production technology, make the basic assets more efficient through modernization, and introduce scientific labor organization measures.

The closer linking of science with production thus objectively demands in all fields, on all levels, further to strengthen socialist cooperative efforts, the joint efforts of scientists' collectives in the Academies, the universities and technical schools, the people in R&D, the technologists, the production workers, all the way down to the sales collectives in the combines.

FOOTNOTES

1. Cf. "Zur Vorbereitung des XI. Parteitages der SED. Aus der Rede des Genossen Erich Honecker, 10. Tagung des ZK der SED" [In Getting Set for the 11th SED Congress--From Comrade Erich Honecker's Speech--10th SED Central Committee Session], Dietz publishing house, Berlin, 1985, p 31.
2. Ibid., pp 31-32.
3. Guenter Mittag, "The Meaning of Our Policy: Everything With the People, for the People," NEUES DEUTSCHLAND, 21-22 September 1985, p 5.
4. Karl Marx, "Principles of the Critique of Political Economy," "Werke" [Works], Vol 42, Dietz publishing house, Berlin, 1983, p 600.
5. Karl Marx, "Das Kapital" Vol III, "Werke," Vol 25, Dietz publishing house, Berlin, 1964, p 80.
6. Ibid., p 81.
7. Friedrich Engels, "Introduction [to Karl Marx' 'Wage Labor and Capital,' 1891 edition], "Werke," Vol 6, Dietz publishing house, Berlin, 1959, p 599.
8. Friedrich Engels, "Outlines for a Critique of the National Economy," "Werke," Vol 1, Dietz publishing house, Berlin, 1956, p 509.
9. "Zur Vorbereitung . . .," op. cit., p 32.
10. Cf. Guenter Mittag, "The Principal Task Policy Shapes the Plan and the Manifold Initiatives for the 11th SED Congress," NEUES DEUTSCHLAND, 30 November-1 December 1985, p 6.
11. Comrade Werner Jarowinsky, "Aus dem Bericht des Politbueros an die 11. Tagung des ZK der SED" [From the Politburo Report to the 11th SED Central Committee Session], Dietz publishing house, Berlin, 1985, pp 39-40.
12. NEUES DEUTSCHLAND, 7 November 1985, p 3.
13. Cf. "The Fastest Way to Top Achievements," NEUES DEUTSCHLAND, 23 October 1985.
14. Cf. "Machine Builders, New Ways and the Time Factor," NEUES DEUTSCHLAND, 8 August 1985, p 3.
15. "Zur Vorbereitung . . .," op. cit., p 45.

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INTEGRATION OF COMBINES, RESEARCH INSTITUTES EXAMINED

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pp 21-27

[Article by Prof Dr Wolfgang Biermann, member of the SED Central Committee, general director of the VEB Carl Zeiss JENA Combine: "The Combine's Scientific Potential"]

[Text] In "Das Kapital," Karl Marx says that the productive force of labor is, among others, determined "by the workers' average degree of skill, the developmental level of science and its technological applicability, the social combination of the production process, the scope and effectiveness of the means of production, and by natural circumstances." (Footnote 1) (Karl Marx: "Das Kapital," Vol I, collected works, Vol 23, Dietz Publishing House, Berlin, 1962, p 54) The effectiveness of a combine's science potential stands and falls with the political and technical abilities of the managers to grasp and bring to full effect all these factors involved in the boosting of labor productivity.

"Departmentally" conceived, that could not be done; it calls for a combine strategy that takes into account the dialectics of all the phases in the reproduction process.

The most important and, possibly, also the most complicated task in the struggle for a higher economic effectiveness of science and technology, for a higher labor productivity, in our experience is the effective linkage of the scientific-technical progress with the advantages of the socialist social order. This task, basic, after all, to our party's entire economic strategy, can be mastered only if we as managers are in the position to turn its profound socioeconomic content into the starting point for all strategic considerations and to understand and apply the unity of economic and social policy as a central concern of our party policy.

Target-Oriented Research Organization

A large economic potential is put together in the VEB Carl Zeiss JENA Combine. The most significant potentials in the GDR's precision mechanics and optics industry are brought together in its 22 combine enterprises---two of them research centers, two engineering enterprises for rationalization, and one foreign trade enterprise. Some 23 percent of the work force comes with

college or technical school training. Circa 5,000 working people are engaged in R&D directly. Another 400 at Academy and college institutions are working on the combine's research tasks on a contractual basis.

Research is subdivided into:

- explorative research, which aims at uncovering fundamental connections and finding effects and working principles,
- application-oriented basic research, aimed at making effective for the first time and/or combining for the first time new working and labor principles, and
- project-related lead research, preparing new developments and modernizations of products within the framework of product groups.

Our combine has taken care of the growing importance of leads by that in both research centers a technical lead research management was set up. It coordinates the lead projects of the various product groups while it also engages in a product group transcending lead within the chief developmental lines typical of Zeiss. This is the long-term approach to finding and solving tasks.

An ever closer linkage among all components of the upgrading process--from basic research to product development--is an indispensable requirement for reaching top achievements and staying competitive with them on the world market.

At the 10th Central Committee session, Comrade Erich Honecker underscored the extraordinary importance of including the research potential of the Academy of Sciences, universities, colleges, and technical schools in the tasks of the combines. Taking its clues from previous experience, "the Politburo has issued measures for developing economic relations between the industrial combines and the facilities of the Academy of Sciences and of university affairs. All basic conditions will be set up to tackle the tasks of basic research jointly and resolve them through fruitful science cooperation, which will lead us to top achievements in science and technology." (Footnote 2) (Comrade Werner Jarowinsky, "Aus dem Bericht des Politbueros an die 11. Tagung des ZK der SED," Dietz Publishing House, Berlin, 1985, p 48)

The industrial application and economic utilization of their scientific data form a highly essential motivation for the associates in these institutions. We are seeking an effective cooperation that protects all that is specific in our partners. Merely thinking in terms of giving and receiving orders or expectations that are unfulfillable would be as harmful for it as some mutual underestimating. The more intensive research cooperation becomes, the more important is the research potential belonging to the combine as, precisely, our own qualifications make for the capability for jointly solving research tasks and make us gain time when taking over results.

The success of this cooperation is based on a business-like approach to solving tasks assigned and on clear, intelligible forms of organization.

Proceeding from our combine's contour trends and relying on the long-term science potential of Academy and university institutions, stable relations have evolved with eight principal partners. With them we take care of circa 90 percent of our entire research cooperation. The largest share in this goes to the Friedrich Schiller University, at some 40 percent.

The cooperation with our principal partners is based on long-term skeleton agreements which set down always for a 5-year period the chief research cooperation fields and arrange for the modalities in this cooperation. The whole thing is carried out through economic contracts on the specific research tasks.

The research cooperation is prepared and accounted for annually, relative to themes, on the basis of mandatory organizational and deadline leads. They range from the preparation of requirements or annual targets by the ones responsible in the combine--as basis for correlating with the cooperation partners--all the way to thematic or year's closing defenses, where the fulfilment of commitments agreed to in the tasking workbooks or annual working plans is accounted for and assessed and the needed rules are set down for continuing the projects or carrying the data over into the combine. That also includes preparing joint correlation proceedings or annual working plans as a basis for the partners' plan elaboration, the correlation of coordinated tasks with their draft plans, the coordination and confirmation of the annual working plans, and the concluding of economic contracts for research tasks agreed upon.

This form of organization assigns equal value to the topics of research cooperation and one's own R&D topics, including them into the controls exercised by and the accounting given to the next higher management. That also makes sure that the trusteeship and the material accomplishments the combine has to allocate are planned and balanced in the sector that has the responsibility for the topics.

The 12 September 1985 Council of Ministers resolution improved the premises for focusing the research potentials of the Academy of Sciences and of university and technical school affairs onto the requirements for the combines' economic and technical-technological development. The combines have the task to help form the basic research targets in the science institutions referred to in such a way that a greater effect will be exercised by them on the future scientific-technical contours of the combines and a fast and effective utilization of data becomes possible. To that end, performance contracts have to be concluded for all research cooperation tasks, and concrete, clearly accountable agreements have to be made, based on scientific-technical objectives, on the quality of research data. These agreements relate to technical-technological and economic parameters and coefficients of the data in conformity with the purposes for which they are intended, the growth in scientific knowledge, gauged against the advanced international standards of science and technology, the objectives in inventions and the copyright work, and the form of handing data on and their terms of acceptance.

This places a new qualitative demand on the further intensification of the relations and the enhancing of their effectiveness, which can be attained only through substantive work and through guaranteeing high achievements and top results. For that, in particular, one's own strategic scientific-technical work has to be intensified so that on that basis the targets for the lead research can be concretely set down in the partners' science institutions and a fast and economic utilization of the research data is ensured in the combine.

Challenging and Encouraging the Partners' Performance

A realization derived from experiences is that the level of the research cooperation results depends on the capability and commitment of both sides. The material-technical base is of course an extremely important factor there. Concerted efforts, e.g., relative to research laboratories, technical seminars, and equipment have been and are of great mutual benefit. Through setting up joint laboratories one found out how to get into particular techniques, and the data transfer was accelerated. This data transfer acceleration came through target-directed personnel exchange. The achievements it led to were exemplary. Through such direct contacts the scientists experience emphatically how much their scientific-technical achievements are wanted.

Focusing the cooperation with our cooperation partners at high scientific-technical and economic objectives means not only exhausting our own science potential, it also means drawing that of our research partner's into the combine's reproduction process. This must be planned long-term and implemented purposefully. That way alone it is possible to bring about mutual partnership in a comprehensive sense, i.e. to achieve joint conceptual work, the forming of joint research collectives, and the correlating of the science potentials and material-technical opportunities with the solution of the tasks for mutual benefit.

Commission-related research on an economic basis opens effective new possibilities because that achieves consistency all the way from basic research to the product and the production technology, makes the end result provide the science institutions with a higher place value, and accomplishes the breakthrough in achieving an economic utilization.

Contractual commitment with financing from the one who gives the order makes possible an accurate influence on what was agreed on and a control over the steps taken toward it which, in case of nonfulfilment may also lead to a cancellation of the funds. That, however, also requires an informed decision on whether an objective ex post facto appears unrealistic or the cooperation partner's "faulty research" led to the nonfulfilment of the agreement. One must always assess as accurately as possible the risk factor of any scientific project and, when it breaks down, not dodge the thing retroactively. Then also, the integration of the commission-related research with the reproduction process calls for a still more responsible handling of accomplishments produced. Much, after all, depends on economic utilization, such as the cooperation partners' getting back their investments.

Dealing responsibly with our partners' science potentials means using them as cautiously as our own while fully protecting their integrity. That already is demanded by the magnitude of what we spend annually for the over 100 topics in committed research. Though we have already committed contractually copious capacities with our cooperation partners, we want to make still more intensive use of the potentials of the Academy of Sciences, the universities, and the colleges and technical schools. The first step toward it is involving prominent scientists in prognostic work so that a suggested cooperation can be vested also in the plans of the science institutions.

A managerial responsibility is to open up and sensibly invest. our country's material and intellectual potential in achieving a maximum result through small outlays. The way we cope with that, the way our advances will be toward comprehensive intensification. Ultimately this way we also will help decide what the rank and place of our state will be in the international arena, how weighty the word it speaks among the peoples.

That calls for strategies for which the general director bears special responsibility and which are based on objective criteria in national and international development. That way alone we can make sure that the basic strategic trend resting on economic requirements prevails instead of getting lost in the everyday struggle for plan fulfilment.

The accomplishments of the VEB Carl Zeiss JENA Combine in the last 10 years are unthinkable without the close cooperation with science collectives in the USSR within the scope of socialist economic integration. That holds true especially for the development and production of specialized technological equipment for the microelectronics industry in our two countries.

We are working closely together with science and production facilities in the Soviet Union to supply the economy in our countries, within the framework of the GDR-USSR government agreement on microelectronics, with the most up-to-date specialized technological equipment for the components industry. Through this cooperation we have managed to produce equipment in series which, in the USSR and GDR semiconductor industry, sets the premises for producing and testing highly integrated circuits.

Men's Knowledge, Skills and Abilities Remain Decisive

Our work and cooperation are dedicated to strengthening our state as our most important contribution to securing peace. The further profiling and concentration of our science potential is committed to that goal.

In all high-tech sectors, which increasingly determine our combine's future, we deem it extremely important to structure the work with youth brigades and youth research collectives responsibly and while looking ahead. Frequently, after all, tasks assigned to youth research collectives today will later lead to products that are wanted. In each and every case, however, the question has to be raised and answered conscientiously whether a youth research collective can handle it or not. In our experience youth proves its mettle when taken seriously and finding out the work it does is needed. Quite a lot youth does better and more unconventionally than many an "indispensable" cadre.

The success of those who are working in youth research collectives on developmental assignments today greatly depends on how they from the very start ally themselves with the production collectives that will eventually translate their inventions into material products and highly effective technologies. It is becoming increasingly clear to all of us that only through an ever closer alliance between the working class and the intelligentsia can we cope with all the problems. In the most important and scientifically most demanding fields of our work, particularly in high-tech, changes have already taken place in the

structure of the work collectives that we would have regarded as impossible only 10 years ago. Here highly skilled specialists and scientists are working together on three shifts, and each depends on the abilities and experiences of his comrade. In this process, the skintight wrestling with the scientific-technological progress, we see with our own eyes the rapprochement between the working class and the intelligentsia.

The test for this cooperation between workers and researchers is the quality of the transfer of new products and procedures. Whatever gets onto the drawing board must be able to be made well and rationally, too, else the best invention does us no good. That also is, not last, the reason why technological work and the in-house rationalization means construction are so important. To these new conditions we adapted ourselves by setting up our two engineering enterprises for rationalization and the technological sectors in our combine enterprises.

The combine's dynamic development is largely due to microelectronics. By way of the economic structure policy of the GDR and the USSR, microelectronics has become the centerpiece of the long-term joint efforts in high-tech. Especially however, microelectronics or also, e.g. news transmission through light circuits make new demands on men, on all their educational and skill levels.

Training questions in the broadest sense of political and technical training, those of education and training in all the enterprises of the combine, are therefore of a great importance of principle. Preparing ourselves in this regard for the demands of the future calls for

- developing a sufficiently broad number of staff personnel for management functions,
- training highly skilled specialists and socialist research personalities, and
- creating a highly skilled and flexible staff of technicians and a relevant engineering potential.

Being oriented to the future mainly means preparing young workers in good time for managerial functions. An essential source of such a new generation of cadre are young workers who are socially active and are doing good technical work. Development contracts are concluded with them, and they are delegated to industrial institutes, universities and technical schools, and then they get the chance to acquire political qualifications and prove themselves in solving various tasks in different functions. Right now we have a staff of 685 workers. By 1990 we are going to have 800.

Highly skilled specialists and research personalities--this we have experienced more than once--do not develop in one or two years. Here one needs long-term and differentiated procedures. Talents and gifts must be grasped and individually promoted and challenged--and that takes one to two decades.

A cornerstone for our future top cadres is laid in Jena's special Carl Zeiss school in physics. There is a contractual cooperation between that school and the combine through which scientists in our research center assume custodial tasks and jointly work on science problems and through working seminars. A high school equivalency then is earned in the end, and important courses of study are contractually agreed to for the VEB Carl Zeiss JENA Combine.

In the vocational school that leads to a high school diploma we have set up special classes for the gifted. One can be quite sure that this is the right way.

In organizing and effectively coping with this educational process, we are learning new things every day. There are some problems in finding the objective selection criteria for apprentices for these promotional classes, in the selection and structure of instruction and teacher training, and in continuing the promotion of the gifted during these studies. Nothing, above all, must be allowed to be haphazard about it.

We also are turning, deliberately, young college cadre showing above-average achievements in the enterprise into science specialists. That amounts to an integration with a most strongly performing science collective and target-directed further political and technical training. We have had fine experiences with creativity training courses in Dessau, cooperating with the ministry for construction industry. There, by means of indentures, methods are conveyed for creatively solving science problems, which methods are then immediately used to solve actual research problems. That form links advanced training with research and is extremely effective. A training team has six to 10 participants, and a specialist in research methodology (e.g. a Distinguished Inventor), a psychologist, and an enterprise specialist are in charge. Six patents and the design for a device to be put out as of 1986 are scientific and economic results of considerable value and came out of the last creativity training course.

But not only our top cadre, be they managers or science specialists, have to be oriented to future requirements. It applies equally to anyone working in our combine now or in the future. In that I include the formation of a solid new generation of technicians who can be assigned flexibly and meet the requirements beyond the year 2000. With more than 2,200 apprentices completing their vocational training annually, that is a highly responsible task. As the training takes 2 to 3 years, we thus always have more than 4,000 apprentices in our seven enterprise schools and engaged in practical work of their trade. Worth mentioning are also the Carl Zeiss engineering school for scientific equipment construction and the Hermann Pistor optometry school from which many of our engineers and all fully trained optometrists graduate. Both training institutions are closely linked with the combine. They are aided by financial and material appropriations--when a new technical laboratory has to be set up, for instance--and by deputizing expert training personnel from the combine. Within the framework of that industrial partnership, these educational institutions are assigned requirements for engineering projects, closing and covering projects, and MMM [Fair of the Masters of Tomorrow] tasks; combine specialists are in charge. The training programs of these technical schools, geared to the combine's requirements, furnish us engineers and optometrists who do not need much time to be broken in so they become fully effective. Especially the engineering school has adapted itself more and more to the requirements from microelectronics.

Such a high training effort is needed to ensure a production substitution rate of 30 and more percent annually in our combine. Advanced training, be it organized in the labor process or through training facilities, more and more becomes itself a component of labor. That also requires new ideas from management about integrating permanent advanced training in the overall reproduction process.

However, the various education and training measures provide higher efficiency for the whole outfit only if we improve our ability to educate personalities who are willing and able to assume, and apply in their work collectives, political and technical responsibility. The importance of the subjective, human factor keeps growing. A crucial advantage of our social order lies in our ability to exploit it. To do so more and more is what we regard as the most important precondition for further boosting the efficacy of our science potential. In the combine's top achievements as planned our researchers find ambitious proving grounds, to be coped with at the highest quality together with all cooperation partners.

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TECHNICAL INSTITUTES SEEN AS ECONOMIC INTEGRATION KEY

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[Article by Harry Groschupf, GDR deputy minister for University and Technical School Affairs: "Technical Schools--Centers of Cooperation Between Science and Production"]

[Text] The universities and colleges in our country with their extensive research potentials are also greatly challenged to get to new products, procedures, and technologies through their basic research that ranges into the far distant future. They will meet those demands all the sooner, the more they are propelling the research cooperation, aimed at high effectiveness, with the combines and the Academy of Sciences institutions. That is good for intensification. Wholly in that sense, coordination contracts are now being drawn up between the colleges and combines. A central spot in them is given to research cooperation for the sake of rapid transfer and a profitable economic utilization of research results. The coordination contracts provide a long-term and stable foundation for teaching, research, and continuing education cooperation, for delegating young technicians for studies, and for assigning graduates.

The close economic linkage between science and production is a compelling need as today, after all, the advances in all economic sectors and hence, the further gradual elevation of the material and cultural standard of living, depend on the latest science and technology data to get rapidly mobilized for our economic growth. Especially the key technologies in their complexity and mutual dependency call for more cooperation among all science disciplines involved. They require long-term basic research for the sake of breakthroughs in techniques and technology. Combining the R&D potentials of the industrial combines with the potential of the Academy of Sciences and university affairs gains far-reaching importance with respect to it, as emphatically underscored at the 10th and 11th SED Central Committee sessions.

In natural science and technical research, cooperation aimed at new products and technologies, and thus at application and economic utilization, comes in many forms. Contract research, joint research and application teams, and user communities for highly efficient research technology are part of it as much as consultation and counseling centers or joint transfer collectives. Not last,

there are the Technika [technical institutes] at universities and colleges which are lending perceptible impulses to the research cooperation. They are, as it were, a combination of research labs, application, measuring, and testing centers, science workshops, and training labs.

Evolved in the process in which the eighth party congress resolutions are being fulfilled, they have the function, in conformity with the "conception on the long-term development of the Technika at the universities and colleges," which the GDR Council of Ministers passed in October 1982, to raise decisively the colleges' contribution to the development of new products, procedures, and technologies, speed up the process of production substitution, and boost the dissemination rate of innovations. To that end it is necessary to match basic and applied research more effectively with each other and link them more closely with design and project planning, with technological and technical procedural development. A higher maturity rate in application and transfer is wanted in the college research results to speed up the application and economic utilization of the results of scientific efforts.

The concepts developed by the university scholars and the experienced scientists and engineers in the combine on the goals, tasks, and priorities of the work in the university Technika followed the basic 10th party congress guidelines on implementing the party's economic strategy including those for the economic and science cooperation with the Soviet Union and the other CEMA countries. They thereby responded to the identifiable national and international developmental tendencies of scientific-technical progress, the future prospects of key technologies, and the growing role of base innovations with respect to economic growth and social progress.

The highest priority was thus granted to setting up Technika in the key technology fields. At the Karl-Marx-Stadt Technical College one was set up for cycle I in microelectronics, which explores microelectronic base technologies. The first results, in the form of integrated circuits for coronary pacemakers and watches were brought to production maturity relatively fast and put into industrial production. That the way taken was correct is indicated by that there one is currently working on exploring new base technologies and developing a third generation pacemaker. Or take the Dresden Technical University which created an efficient research potential for developing microelectronic assembly techniques. In the last few years, up to 600 scientists, associates and students, mathematicians, electronics specialists, physicists, automation technicians, information specialists, designers of special technological equipment, and other specialists were working in an interdisciplinary manner on automated solutions for the assembly of microelectronic components and construction elements. Through the interdisciplinary effects aimed at that technology here a high application maturity of the qualitatively new technological solutions was reached, and many different applications for microelectronics were opened up. The high scientific progress in microelectronics now demands of the scientists resolutely to face those tasks that result from the accelerated development of highly integrated circuits and demand new assembly technologies.

This example illustrates that the development and application of the key technologies also require the further development and modernization of Technika relating to them. That also includes the bio-technikum in the process of being set up at the Martin Luther University, Halle-Wittenberg. It is expected to exercise a great impact on advances in biotechnology which are making fast headway internationally.

What experiences can be derived from the activity thus far of the scientists, engineers, and students at the Technika in the universities and colleges? What inferences and conclusions can be drawn from it for further developing the cooperation between colleges and the combine in research and production?

Theoretically Demanding Basic Research

In many economically and scientifically important college research projects a much more intensive connection of fundamental basic research with applied research and with the development of new products, procedures, and technologies was obtained. Research results going into production and leading to highly innovative products and decisive advances in technology, yielding great economic benefits when applied, had their starting point in basic research in fundamental questions in natural science, techniques, and technology. High-rank technological solutions as can be worked out in modern Technika can over the long run be attained only when the technical-technological R&D is steadily nourished from the inexhaustible source of fundamental research, by the latest results of science development. The 10th and 11th SED Central Committee sessions made much of this role of basic research and underscored that the basic research contractually agreed on between the combines and colleges, set up long-term, and to a large extent implemented jointly, is of decisive importance for economic growth, industrial efficiency, and the fulfilling of foreign economy tasks.

Longtime basic research done by a scientists collective at the Otto von Guericke Technical College in Magdeburg on flow-mechanical and thermodynamic problems formed the basis for technological solutions and technical problems in the vortex layer technology to be implemented industrially at a large scale. Conspicuous savings in investments, the trimming of energy consumption up to 30 percent in energy-intensive processes, a perceptible increase in the material and raw material output and in the quality properties of the products, as well as remarkable import savings, became possible in the chemical industry, the foodstuffs economy, agriculture, and other economic branches. Basic research in solid state physics at the Karl-Marx-Stadt Technical College led to a broad palette of technological application in producing extremely thin or super-hard layers and facilitated considerable savings in material and new work piece combinations in the tool industry.

Speeding Up the Rate of Transfer

Decisive for the economic and social efficacy of research at the universities and colleges is the rate in which new natural science and technical data are obtained, is their transfer into effective technical and technological solutions, their first introduction to industry, and the economic spread of the innovations. A critical point in the basic research-applied R&D-production

chain has always been the time it takes to transfer novel scientific-technical data to industrial use. Quite a number of college research data were technologically not mature enough, which delayed their industrial application. That ultimately facilitated a moral wear and tear of scientific knowledge and cut into the likely economic benefit. Especially there, in and through the work of the Technika, a considerable change has occurred which keeps getting more and more noticeable.

Just take the Cottbus Engineering College where, through a close interdisciplinary cooperation of project planners, technologists, economists, materials scientists, and mathematicians, a new type of wall skeleton construction was developed, an experimental structure was erected in an exceedingly brief time frame, and then, after only a few months, this new type of construction was put up at an industrial scale in downtown Leipzig. The unusually brief transfer periods, compared on the international scale, also became possible because the technological and design solutions developed at the drawing board, in the lab, and in the computer center of the college could be produced in a near-industrial manner at the "Preproduction Technikum" and tested for their functionality. All essential components for the experimental structure and the first industrial use were made in this Technikum and were made available to the construction in practice. While exploiting these positive experiences in seeking a high application maturity for research results and speeding up the transfer to practical construction, the collective of scientists and students at this college at present is working on the development and testing of a tie-less construction method for public and industrial structures.

Having the colleges come out with applicable research results applies particularly to the kind of results of scientific research the use of which throughout the economy facilitates and causes significant innovations. Those are mainly new components and component groups, new working materials, substances and preparations that are decisive for implementing key technologies. At the Karl-Marx-Stadt Technical College, e.g., many new sensors have been developed which are of great importance for automation. Martin Luther University has developed Peltier coolers in microelectronic technologies which are crucial for further research, developments, and applications in the light circuit communications field. These new components must be made available for as broad and fast an application as possible, for continued R&D tasks, and for getting set for industrial manufacture. That also is the reason why the Technika in the universities and colleges have the function of effectively supporting the thereby possible innovation processes by workshop or small-series manufacture. Wherever the cooperation of researchers, potential producers, and future users is started efficiently and in good time, a high speed of transfer of new basic research data and a rapid economic utilization of research data are obtained.

The Unity of Teaching, Research, and Practice

The Technika at the universities and colleges are increasingly turning into places of effective cooperation between science and the practical field, into centers in which the proven principles of the unity of theory and practice, and teaching and research, are brought to realization on a high level. Thus, at the Technikum for High-Speed Rollers in the Freiberg Mining Academy, scientists,

engineers, staff members, and students at the college and the Ernst Thaelmann heavy machine construction combine Magdeburg and the VEB quality and high-grade steel works combine Brandenburg are developing highly productive rolling technologies and are perfecting the rolling mill techniques. At the "Microelectronics Technikum" of the Karl-Marx-Stadt Technical College, always about half of the ones working there are members of the college and of the microelectronics combine.

Through this cooperation not only the organic connection between basic research and the requirements for product and technology development becomes much more intensive, there also are developing new forms of socialist cooperative efforts in research and in transferring its data into production. The scientists at the colleges, particularly the new generation of scientists, become more knowledgeable about the concrete development requirements of industry, and the specialists of the combines and their science facilities through this cooperation gain access in a rational way to the new international developmental science data, to important technological advances, and to new research techniques.

The Technika also are gaining importance to organizing scientific-productive studies at our colleges, as the students are early in the game drawn into R&D projects that are scientifically demanding and relevant in practice. Thus already while they are still studying they can make contributions to the implementation of the economic strategy and are they being prepared in a manner that relates to practice for their later assignments as R&D engineers in design or technology or as managers of work collectives.

In many Technika students, within the scope of FDJ initiatives, youth projects, or through youth research collectives, made up of students and the new generation of scientists at colleges and young engineers, technicians, and specialists of the combines, are working on and solving important tasks of the scientific-technical progress.

The Technika have an importance of equal rank as centers for further training for the colleges' own new generation of scientists and specialists from the combines, enterprises, and institutions. A growing number of experienced technologists, designers, economists, and enterprise engineers already got skilled advanced training at these Technika to speed up technological progress, elevate the technological production level, and put science more still into effect.

In the stretch on the road behind us in setting up and using the Technika, our universities and colleges have already had much success in linking science with production and reinforcing the relations between combines and colleges. Decisive for the results achieved, which are to be extended further in a target-directed fashion, were the directional resolutions taken by the party and the government to use the advantages of socialism more still for coping with the scientific-technical revolution. This development received its substantive guidance from the conception on the long-term development of natural science, mathematics, and technical basic research, relying on which state commissions and other tasks in the science and technology state plan assigned challenging tasks to science to help contribute to the implementation of the economic strategy.

A key to success on this road of development has always been the leadership role of the party organizations in the colleges and combines. Joint party activists groups and their meetings, regular conferences among the party secretaries of the industrial and college facilities involved, as much as the conferences "on the spot" with scientists and associates, have led to the mobilization of all capacities, to fruitful socialist cooperative efforts in setting up and making use of the Technika.

In the months and years ahead we must still more effectively place science and education, as a productive force, at the service to comprehensive intensification, to the economy, and to that end still more effectively exploit the considerable potentials of the Technika. This way the members of university affairs, getting set for the 11th SED Congress, are going to link science with production in a new qualitative fashion and facilitate a rapid transfer of research data.

5885

CSO: 2300/164

INCREASE IN MERCHANT SHIPPING TONNAGE REPORTED

East Berlin PRESSE-INFORMATIONEN in German No 151, 30 Dec 85 pp 2-3

[Article by Dr Heinz Rentner, deputy minister for transportation: "Rising Capability of Maritime Ports"]

[Text] Every 3d ton of export and import cargo of our country passes through the three maritime ports of the GDR: Rostock, Wismar, and Stralsund. Some 55 percent of the unique trade between the GDR and the USSR is accomplished via the maritime route.

This volume demands that the capacity of the ports be constantly increased. In 1975, some 15.5 million tons of cargo were moved through the three ports; by 1980, it was already 19.2 million tons; and by 1985, more than 25 million tons. In the VEB Maritime Port of Rostock, goods moving from and to the USSR account for one-third of the cargo turnover. In the 25 years of its existence, this internationally recognized maritime port has permitted around 60,000 vessels under 67 flags to tie up and discharge their cargo and has accounted for loadings of 265 million tons of all types of cargo.

High Commitment of Collectives

The more than 7,000 workers in the harbors of Rostock, Wismar, and Stralsund have contributed with multiple initiatives toward this capacity increase. For example, 390 collectives, numbering more than 4,500 workers, including 127 youth collectives, participated in the maximum output shifts in honor of the 1985 Day of World Peace. The increases in daily capacity of the seaport of Wismar, from 11,800 to 14,000 tons per day, stand out, as does the exceeding of the norm with respect to potash loadings by the youth collective by 887 tons to a total of 5,081 tons in a 12-hour shift. In so doing, the collective experiences have influenced the total work load. Thus, it proved effective to understate the daily work quotas per shift and to identify the best workers immediately after the shift, to recognize their readiness to act as well as to always publicly announce plan fulfillment results.

It was possible to achieve high performance results in cargo turnover through modernization, reconstruction, and expansion of port facilities through the application of modern technology and equipment. During the period following the 10th Party Congress of the SED, a second overseas port of Rostock was

virtually constructed. New cargo complexes for grain, fodder crops, fishmeal, and bulk cement, a transloading facility for urea materials were developed during this time period, for example. This expansion also included a mooring facility for deep-draft vessels alongside the bulk cargo queue. At the same time, workers of these ports rebuilt five original moorings specialized with respect to the turnover of import goods through rationalization and supplementing measures, which created capacities for a total of 15 new export lines. New moorings were developed for metal transport. High-capacity cranes and computer equipment facilitated a thorough mechanization which is required for the anticipated annual turnover of 3.5 million tons of metals, consisting primarily of imports from the USSR.

Innovations also exist in the other two maritime ports. In Wismar, an elongated shore-based loading bridge provides facilities for loading bulk potash into two large-scale vessels. An average of 1,000 tons of fertilizer are moved to vessels via conveyors which are many kilometers in length; or the cargo is moved to three new storage sheds. The core of the large-scale facility is formed by an automatic freight car loading facility. Two robots bring a daily total of 190 to 220 special freight cars to the loader, open them, and close them. The potash is transported via bunkers and subterranean conveyors.

At Stralsund, voluminous reconstruction measures have increased the loading of salt to 300 tons per hour. The new ship-loading facility produced for this purpose by the VEB Combine for Maritime Traffic and Port Economy has helped the Transport Branch Rationalization Facility Construction Enterprise attain completely new quality indicators.

Turnover of Large-Scale Container Traffic Tripled

Tremendous efforts are being undertaken to meet the requirements of container traffic, which is developing dynamically both on a national scale as well as on an international scale. The loading of large-scale containers in the maritime port of Rostock has tripled in the past 5 years. In October 1985, it was possible to activate a portion of a modern container terminal at Rostock. Here, a TAKRAF-Portainer--a special hoisting device for loading and unloading ships, is in operation. This is a new symbol and landmark of socialist expansion along the banks of the Warnow River.

The transport of goods using Ro/Ro [roll on/roll off] vessels has taken on increasing significance particularly along the traditional line from Riga to Rostock. Between these two ports, 1984 saw the realization of more than 41 percent of total container traffic and almost 31 percent of the total Ro/Ro service involving the exchange of goods with the Soviet Union realized. Here, trailers--in other words, flatbed trailers which are loaded with containers or piece goods--are rolled onto the ship and rolled off at their port of destination. This substantially cuts transloading times.

Since 1984, a new form of production management has been used to speed up the dispatch of vessels in the port of Rostock. In order to manage the transport, transloading, and warehousing processes in a better manner, a computer system is used to manage all capacities available for goods and vessel dispatch more

precisely. A resulting dispatcher program is constantly controlled by the operations center and brought up-to-date. This port throughput "port balance" involving goods, ships, and inland waterway transport facilities has proven itself in practice.

The port railroad station of the Rostock overseas harbor is one of the largest classification yards in the GDR with its 220 km of track. Its throughput capacity is decisive for the smooth transportation of cargoes. Some 90 percent of the cargo is handled by rail. With the connection of the overseas port to the electrified railroad line between Berlin and Rostock, the possibilities for rapid goods turnover are increased. However, this requires a still closer cooperation between the port and the railroad system.

The seaports are faced with significant tasks in 1986 with a projected capacity increase of 5.6 percent. In first place, this involves the supplemental mobilization of performance readiness on the part of our workers and their cooperation partners. Additional emphasis will be placed on the better utilization and introduction of modern technology and equipment involved in goods turnover. Shorter turnaround time for ships, merchandise and land transport facilities are the desirable goals.

5911

CSO: 2300/162

PROBLEMS ENCOUNTERED IN RAILWAY FREIGHT TRAFFIC MANAGEMENT

West Berlin FS-ANALYSEN in German No 3, 1985 (signed to press Sept 1985)
pp 5-84

[Analysis by Rosemarie Schneider, Research Office for All-German Economic and Social Questions: "Railway Freight Traffic--Realization of Objectives after the 10th SED Party Congress"]

Railroad Freight Traffic--Realization of Objectives
After the 10th SED Party Congress

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RAILWAY FREIGHT TRAFFIC--REALIZATION OF OBJECTIVES AFTER THE TENTH SED PARTY CONGRESS

Summary

Domestic freight transport, seen with regard to energy conservation, received particular attention at the beginning of the 1980's. This was due to the GDR economic leadership's intensification program, which desired a more intensive utilization of existing production factors in achieving its economic goals. The resulting objectives for the transport system were twofold: structural measures, and a rigorous restriction of the users' demand for differentiated forms of transport. The most important measure regarding freight carrier structure was the transfer of freight transport from road to rail traffic and a reduction in works transport capacities. As road transport had been by far the more favored of the two until then, the railway system did not possess all that was necessary to take over a large share of transport commitments. Electrification (with a corresponding increase in electrotraction), greater use of branch lines, and container transport could only partly create the necessary conditions for this takeover. Nevertheless, the railway system did indeed improve its performance with the same production factors and without fundamental qualitative changes. The development of road freight transport declined, especially transport carried out by the enterprises' own fleets. The planned alterations in traffic structure were mainly carried out by means of administrative measures, affecting both transport agents and users. Transport agents are being increasingly restricted to tasks involving purely haulage; service apart from this come up against technical, technological and capacity barriers.

A reduction in the amount of transport during the period under investigation (until 1985) was achieved by means of management measures in transport planning, optimization, and the almost total restriction of the enterprises' own capacities. The restriction of demand to a "socially acknowledged degree" is having a detrimental effect on the independence and flexibility--and also increasingly the interests of the enterprises and facilities which use the transport system. Limitations on both capacity and fuel quotas, inadequate technical and technological levels of transfer and warehousing processes, as well as a lack of packaging material, are causing problems which can only be solved in a partial and temporary fashion. Permanent solutions, which are efficient for both the individual sector and the economy as a whole, still have to prove their value. The success of the approximately 22-percent saving in energy in the transport sector must therefore be evaluated in the light of the above shortcomings.

I. Intensification in Domestic Freight Traffic--The Principal Direction for Intensification in the Transport System of the GDR

1. Intensification in Transportation--Its Necessity for the Economy as a Whole

If economic intensification is generally understood to be an increase in productivity resulting from the effective use of the factors of production, intensification in the transportation industry means an increase in productivity with the available factors of production, taking into consideration an optimal economic relationship between the branches of transportation. Intensification, in the communist understanding of the word, is basically required when objective limits are placed on the expansion of the mechanism of productivity.

One set of crucially important considerations for the process of intensification that was to be initiated in the transport system were the economic conditions resulting from the altered energy situation. Equally important were the constantly rising transport requirements of those sectors of the economy using the transport system.

The catalyst for the strategy of intensification in the transport system was the growing cost of raw materials and energy on world markets which started in 1980. The GDR was confronted by increased expenditures for the import of almost all raw materials, but in particular of liquid sources of energy, which led to a rethinking in the transport system of the GDR. As a branch of the economy, transport requires about 15 percent of the total energy used in the GDR, or two-thirds of all the diesel fuel for transportation processes in the transport system and works traffic. (Footnote 1) (Otto Arndt: "The Tasks of the Transport System 1981 to 1985," in: DDR-VERKEHR No 6, 1981, East Berlin, p. 187.) The goal of all the intensification measures introduced in the transport sector of the GDR was to effect a marked reduction in this consumption.

An additional reason for analyzing the performance of all the carriers from an energy-economic perspective was that until 1980 the demand for transportation by the enterprises and institutions using the transport system had shown an unusually sharp increase (see Table 1).

Comparisons between the FRG and the GDR of the development of freight traffic point up this negative development. With 65 tons/person in 1979, the GDR had a clearly higher volume of transportation for all carriers (excluding shipping and air traffic) than the FRG (with 41.5 tons).

The excessive demand can also be seen in the comparison of transportation productivity for the same period, with 5,000 ton/km per person in the GDR and 4,200 ton/km in the FRG. Similar tendencies emerge if economic performance indicators, for example, a comparable gross national product, are used as a basis. In 1979 the situation was less favorable for the GDR, with 5.2 tons, or 397.2 ton/km per M 1,000, compared with the FRG with 3.3 tons, or 333.2 ton/km per DM 1000, both in volume of transportation and transportation productivity. (Footnote 2) (Rainer Hopf: "GDR Freight Traffic Returns to the Rails" DIW WOCHENBERICHT No 8, 1981, West Berlin, p. 84).

Table 1. Development of Freight Traffic Overall in 1960, 1965, 1970, 1975, 1980

| Year | <u>Freight Transported</u> <u>1,000 Tons</u> | <u>1960 = 100</u> | <u>Freight Trans-</u> <u>port Productivity</u> | <u>1960 = 100</u> |
|------|---|-------------------|---|-------------------|
| 1960 | 522,148 | 100 | 50,637 | 100 |
| 1965 | 628,460 | 120.4 | 78,597 | 155.2 |
| 1970 | 764,015 | 146.3 | 128,008 | 252.8 |
| 1975 | 935,108 | 179.1 | 152,742 | 301.6 |
| 1980 | 1,111,881 | 212.9 | 155,294 | 306.7 |

Source: Statistical Yearbook of the GDR, 1984, p. 213

This fact is not unknown to the economic functionaries in the GDR. It has been formulated as follows to justify their transportation strategy: "As studies in the GDR and all comparable countries showed, we are transporting--relative to the entire social product or the number of inhabitants and/or those gainfully employed--both too much and over too great distances, and the necessary reduction of specific economic transport requirements is proceeding at too slow a pace, which is not in accordance with the factors of intensification." (Footnote 3) (Werner Gross, Hermann Wagener: "Transportation in Intensively Expanded Production," in: WISSENSCHAFTLICHE ZEITSCHRIFT DER HOCHSCHULE FUER VERKEHRSWESEN 'FRIEDRICH LIST'," Dresden, No 3, 1983, p 283. See also, "Interview with the Director of the Central Research Institute of GDR Transport, Dr Werner Lindner," in: DDR-VERKEHR No 12, 1984, p. 354)

The unsatisfactory development of productivity in the transport system is determined by the following factors, which at the same time constitute the conditions for intensification of transportation in the GDR:

1. The development of the GDR's economy until now has been characterized by constant quantitative growth, with increasing material intensity. An increasing amount of freight to be hauled and a rise in transport productivity are the consequences, and this is the reason for the continuous rise in the demand of those using the system for transportation services.
2. Growing manufacturing productivity as the result of organizational measures such as cooperation, combination, specialization and concentration, can lead to larger amounts to be carried and to a disproportionate expansion of the need for transportation. Until 1980, using the criterion of "extending the division of labor," cooperative relationships developed without regard for distance, the means of transportation available or that could be expected, their location or the links that existed with the network of the enterprise dispatching or receiving the freight, all in all, without any express consideration of transportation requirements.

One of the consequences was a rapid increase in estimated productivity, but this ignored considerations of efficiency for the economy as a whole. GDR experts now regard this development critically, since perspectives have changed on the economy of transportation.

"Our premise must be that the growth of production in our economy in past years took place on the basis of a division of labor between the enterprises that was being constantly extended, a division of labor which, under present conditions, most certainly does not reflect the best relationship between outlay and result in every case." (Footnote 4) (Gerhard Wunderlich: "Economically Efficient Development of Freight Transportation and the Tasks for Research in Transport Economy in the GDR," in: "DDR-VERKEHR No 3, 1984, p. 69)

3. For the enterprises and combines of the GDR's economy, meeting production indicators stood and, to some extent, still stands at the center of their economic activity. Demands for efficiency were of secondary importance. How else was it possible for inflated transportation costs to be accepted for years without having undesirable consequences or negative economic effects on the enterprises? Those using the transportation system were not forced, either as a result of administrative measures or for economic reasons, to reduce this part of their manufacturing consumption--expenditures for transportation.
4. Decisions of the kind that lead to structural changes in the GDR's economy also bring about increased need for transportation. Among them are:
 - a. Measures for the "conversion of energy resources," i.e. the substitution of brown coal for petroleum.

The GDR's decision to increase brown coal production compared to 1980 by 50 million tons to 310 million tons in 1985 (Footnote 5) (Horst Wambutt: "New Requirements for Producing and Refining Raw Materials for Energy," in: EINHEIT, No 8, 1985, East Berlin, p. 721) will place additional heavy demands on the GDR's transportation system, the extent of which, including the problems associated with starting open-cast mines (rerouting lines, the construction of new sidings, roads, etc.) cannot yet be estimated. (Footnote 6) (see Gernot Schneider: "Qualitative Growth of the GDR Economy," in: "DEUTSCHLAND ARCHIV, No 4, 1985, p. 381)

The following example shows the extent of the additional load being placed on the transportation system as a result of resorting increasingly to coal:

" . . . the poor caloric value of brown coal and its low density make moving it uneconomical, compared with petroleum. For example, to transport an amount of energy of 10^9 kcal in the form of brown coal, which weighs about 500 tons, 10 freight cars are needed. For the comparable amount of energy based on petroleum, about 100 tons, or just 2 freight cars are needed." (Footnote 7) (Ibid.)

Supplying the economy with brown coal as an energy source is an absolute priority for the GDR's transportation system. But new tasks in transportation and haulage are not the only ones to result from the increased mining of coal, changes in the territorial structure and intervention in the transport networks.

" Mining coal with the aid of extensive open-cast mines will lead to substantial intervention in the regional structure and to its partial reshaping. That applies to all regional partial structures, such as production structure, housing structure, the infrastructure for transportation and the structure of regional resources. This creates procedures and relationships which are interlinked in a very complex way in time and space, requiring carefully planning by the territory and all affected branches and areas." (Footnote 8) (Fritz Kabus: "General Transport Planning in the Cottbus Coal and Energy Bezirk," in: DDR-VERKEHR No 4, 1984, p. 108)

For example, in the Cottbus coal and energy Bezirk--the most important center for the mining, processing and refining of brown coal and the generation of electrical energy in the GDR--the

"start up of the confirmed mining conservation areas just until the year 2000 [will require] the devastation of about 70 km of railroad line and about 250 km of public highway. There are plans for the construction of 75 km of new line and rerouting 125 km of line." (Footnote 9) (Ibid.)

Even with strict observance of the state-imposed requirement that the necessary investment for replacing these routes be kept as low as possible, it will use a part of the amount available for investment without showing any tangible increase in productivity for the GDR's transportation system.

- b. The commencement of railroad ferry operation between the Baltic ports of Mukran (Ruegen) and Klaipeda, formerly Memel (USSR), starting in October 1986.

With this decision, which is of strategic importance and which partially frees railroad freight traffic between the GDR and the Soviet Union from transit through Poland, a decisive shift of the flow of freight within the GDR from the previous east-west direction to north-south is being initiated. The investment costs associated with it are considerable. In future, all products destined for transport by rail freight to the Soviet Union will have to cover a greater average distance on the territory of the GDR, because Mukran is located in the extreme north of the GDR. The same holds true for return traffic. It is of particular importance that the ferry ports can only be reached by way of the Ruegen-damm, which is already severely overloaded. Daily operation will show whether the prior decision to dispense with the expansion of the Ruegen-damm can be justified. The responsible planners are hoping to match the increased load on the rail network in the north-south direction by increased flow due to the electrification of this section. In the long run, laying a third and even a fourth track to improve flow in the north-south direction will most likely prove to be unavoidable.

5. Until the beginning of the 1980's the efforts of the transportation system were welcomed as growth in economic production. In the face of all the principles of economy, growing productivity in transport was accepted,

ignoring the fact that it is part of the users' production consumption and contributes to reducing profits.

"According to rough calculations, the economy of the GDR is spending more than M 14 billion annually just for domestic freight haulage by the branches of transportation and works traffic. That is in the magnitude of expenditures by the producing sectors for consumption of electricity. If one considers that haulage rates, as a basis for profits, do not reflect the true cost of transportation and that expenditures for the transportation infrastructure, which are financed from the national budget, essentially also represent transportation costs, an even higher economic expenditure for freight transport between enterprises can be anticipated (as a rough estimate about M 16 to 17 billion)." (Footnote 10) (Hermann Wagener and Guenther Heinrich: "Freight Transport in the Economy and Ways to Reduce it," in: "DDR-VERKEHR, No 6, 1980, p. 192)

Minister for Transportation Otto Arndt reaches the same results in calculating the expenditure for domestic freight haulage at about 5 percent of the production consumption of the entire economy (M 17 billion) (Footnote 11) (see Otto Arndt: "Tasks for the Transportation System of the GDR from 1981 to 1985," in: DDR-VERKEHR No 6, 1981, p. 185)

6. In order to be able to make a more precise judgment about the growth of productivity in the transportation system, the processes that have taken place in the individual carriers must be analyzed more closely.

As Tables 2 and 3 show, over-the-road freight traffic showed a sharp increase until 1980, both in the volume of traffic and in performance, compared with other carriers, while the share of the railway declined.

The shift in the structure of goods in the direction of expensive, high-quality goods, which are especially suited to transportation by road, the locally inadequate range of services offered by the GDR's railway, from the standpoint of both quantity and quality, and transportation policy objectives were the reasons for the increase in road freight traffic. (Footnote 12) (see Section II)

The following statement underlines the priorities in transportation policy until 1980:

"The tendency for the railroad's share in the total work of transportation to drop, while haulage continues to increase, agrees with general development trends in socialist countries; it results from the increasing concentration of the heavy flow of goods on efficient main lines, from the reduction in the number of access points to the rail network, from the surrender to road traffic of jobs that were economically impractical for the railroad and from the rapid growth of road transportation in recent years. This trend was deliberately supported by socialist transportation policy in the interests of improving the efficiency of the transportation system." (Footnote 13) (Authors' collective: "Economy of Transportation," Vol 1, East Berlin, 1979, p. 121)

Table 2. Growth of Freight Transportation Volume in the GDR from 1960 to 1980 in Millions of Tons

| Type of Traffic | 1960 | 1970 | 1975 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 |
|-------------------|-------|-------|-------|---------|---------|---------|-------|-------|---------|
| Railroad | 237.8 | 262.9 | 289.0 | 302.5 | 311.6 | 315.2 | 322.6 | 325.6 | 337.4 |
| Road Freight | 270.3 | 463.6 | 588.2 | 730.2 | 729.8 | 692.7 | 607.6 | 584.2 | 560.7 |
| Inland Shipping | 12.6 | 13.7 | 14.6 | 14.8 | 16.3 | 16.6 | 16.8 | 17.5 | 18.7 |
| Maritime Shipping | 1.4 | 8.5 | 11.2 | 12.1 | 12.6 | 12.5 | 11.0 | 11.9 | 12.8 |
| Pipelines | - | 15.4 | 32.1 | 40.9 | 41.6 | 39.5 | 38.8 | 37.2 | (37.3)* |
| Total | 522.1 | 764.1 | 933.1 | 1,100.5 | 1,111.9 | 1,076.5 | 996.8 | 976.4 | 966.9 |

Carriers' Share in Percent

| | | | | | | | | | |
|-------------------|------|------|------|------|------|------|------|------|--------|
| Railroad | 45.5 | 34.4 | 30.9 | 27.5 | 28.0 | 29.3 | 32.4 | 33.3 | 34.9 |
| Road Freight | 51.8 | 60.7 | 62.9 | 66.4 | 65.6 | 64.3 | 60.9 | 59.8 | 58.0 |
| Inland Shipping | 2.4 | 1.8 | 1.6 | 1.3 | 1.5 | 1.5 | 1.7 | 1.8 | 1.9 |
| Maritime Shipping | 0.3 | 1.1 | 1.2 | 1.1 | 1.1 | 1.2 | 1.1 | 1.2 | 1.3 |
| Pipelines | - | 2.0 | 3.4 | 3.7 | 3.8 | 3.7 | 3.9 | 3.9 | (3.9)* |

* Calculated as a difference

Source: Statistical Yearbook of the GDR 1984, p. 213; Statistical Almanac of the GDR, 1985, p. 86

Table 3. Growth of Freight Transportation Performance of the GDR from 1960 to 1984 in Millions of Ton/Kilometers (excluding Sea Traffic)

| Type of Traffic | 1960 | | | | | | | | | | | |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------|--|--|--|
| Railroad | 32,860 | 41,513 | 49,681 | 54,375 | 56,395 | 55,767 | 54,016 | 54,884 | 56,654 | | | |
| Road Freight | 5,002 | 12,233 | 16,691 | 21,567 | 21,021 | 19,920 | 16,236 | 15,378 | 14,491 | | | |
| Inland Shipping | 2,252 | 2,358 | 2,362 | 1,933 | 2,159 | 2,359 | 2,290 | 2,424 | 2,642 | | | |
| Pipelines ² | 5 | 2,183 | 4,314 | 4,991 | 5,069 | 4,825 | 4,754 | 4,372 | (4,348) ¹ | | | |
| Total | 40,119 | 58,287 | 73,048 | 82,866 | 84,644 | 82,871 | 77,296 | 77,058 | 78,135 | | | |

| | <u>Carriers' Share in Percent</u> | | | | | | | | |
|-----------------|-----------------------------------|------|------|------|------|------|------|------|--------------------|
| Railroad | 81.9 | 71.2 | 68.0 | 65.6 | 66.6 | 67.3 | 69.9 | 71.2 | 72.5 |
| Road Freight | 12.5 | 21.0 | 22.9 | 26.0 | 24.8 | 24.1 | 21.0 | 20.0 | 18.6 |
| Inland Shipping | 5.6 | 4.1 | 3.2 | 2.3 | 2.6 | 2.8 | 2.9 | 3.1 | 3.4 |
| Pipelines | - | 3.7 | 5.9 | 6.1 | 6.0 | 5.8 | 6.2 | 5.7 | (5.5) ¹ |

1. Calculated as a difference

2. Including air traffic

Source: Statistical Yearbook of the GDR 1984, p.213; Statistical Almanac of the GDR, 1985, p. 86.

The merits of this way of operating were still being extolled in 1979, and working according to a plan and proportionality were being stressed in the transportation system.

"Under socialist conditions the entire economy grows according to plan and in proportion. . . . This has substantial effects on the need for transport, limiting it to the economically necessary amount, its planned growth as well as satisfying this need efficiently by means of the method of transportation that is most suitable in each case." (Footnote 14) (Ibid. p. 221).

A short time later this deliberate introduction of proportionality and working according to a plan proved to be in need of revision, causing noticeable restructuring in the transportation system.

7. Previous investment policy represents another important condition for the structural changes in the transportation system of the GDR. (Footnote 15) (See Johannes F. Tismer: "Economic Policy Strategy for Intensification in Inland Freight Traffic in the GDR in the 1980's," FS ANALYSE No 5, 1982, p. 18). Analysis of investment activity appears to be particularly important because the capital equipment of the transportation branches is of special importance for the program of intensification. In view of the fact that documented investment includes that for the postal and telecommunications system, Table 4 documents a decline in the transportation system's share in the economy's and/or industry's total investments.

The part that went to equipment, that is to say, the actual provision of the means of transportation, formed the bulk of the investments. The part for construction, renovation or new construction of tracks and track equipment or roads, was limited on average to one-quarter of the total amount. The intention was to achieve a rapid noticeable increase in performance in the transportation system as a whole by concentrating the available funds in vehicles and facilities for freight handling, circuit breakers and telecommunications. The inadequate share of the transportation system in the total amount of investments made as well as the structure of those investments, that is, their distribution across the individual carriers and/or institutions, had a deleterious effect on both the scope and the level of the performance of the transportation system. (Footnote 15) (See Authors' collective, op. cit., Vol 2, p 65 ff) These drawbacks are aggravated under the conditions that are placed on the individual carriers by intensification. Greater demands on the railroad, for example, required greater productive efficiency from the rail network, the rolling stock, warehousing and handling equipment as well as from the marshalling facilities, which were oriented toward the increased demands, and maintenance and repair capacities.

Table 4. Development of Transportation System Investments (including Post and Telecommunications)

| <u>Year</u> | <u>Volume of Investment</u> <u>Transportation, Post</u> <u>and Tele-</u> <u>communications</u> <u>Millions of M</u> <u>Comparable Prices</u> <u>(Base 1980)</u> | <u>Percentage Share</u> <u>of Volume of</u> <u>Investment by the</u> <u>Economy</u> | <u>Amount for</u> <u>Construction</u> <u>as a Percent-</u> <u>age</u> | <u>Amount for</u> <u>Equipment</u> <u>as a Per-</u> <u>centage</u> | <u>Percentage Share of</u> <u>Volume of Invest-</u> <u>ment by Industry</u> |
|-------------|---|--|--|---|---|
| 1960 | 1,883 | 10.5 | 34.9 | 56.9 | 22.1 |
| 1970 | 3,174 | 8.7 | 18.1 | 78.3 | 17.4 |
| 1979 | 4,876 | 9.0 | 17.9 | 77.2 | 17.3 |
| 1980 | 4,606 | 8.5 | 24.3 | 68.9 | 15.7 |
| 1981 | 4,834 | 8.6 | 21.0 | 73.3 | 16.0 |
| 1982 | 3,899 | 7.3 | 27.4 | 64.5 | 13.1 |
| 1983 | 3,798 | 7.2 | 26.0 | 66.8 | 12.2 |
| 1984 | 4,004 | 7.9 | - | - | 14.0 |

Sources: Statistical Yearbook of the GDR 1984, p 103, 104
Statistical Almanac of the GDR 1985, p 31

2. Objective of Intensification of Transportation

The objective of intensification of transportation--as part of the overall strategy for intensification--was set forth at the 10th SED Party Congress. (Footnote 16) (See Directives of the 10th SED Party Congress on the 5-Year Plan for the Development of the Economy of the GDR from 1981 to 1985, East Berlin, 1981, pp 24-25) The tasks were established concretely as follows in the law on the 5-year plan from 1981 to 1985:

"To reduce social costs in the economy, as well as for energy-economic reasons, the specific expenditures for transportation of all branches of the economy must be systematically lowered by optimizing delivery and haulage relations. In order to meet freight haulage figures in domestic transportation from the point of view of energy economy, scientific and technological research must concentrate on introducing energy-conserving technologies and comprehensive mechanization.

By consistently shifting road freight haulage to the railroad and expanding transportation of bulk cargoes on inland shipping, the division of labor among the carriers is to be made more efficient. In order to increase the productivity of the railroad between 700 and 750 kms of line must be electrified and more efficient technologies must be introduced, which can make more efficient use of the existing rolling stock and driving units and of the installations . . ." (Footnote 16) (GB1 [Legal Gazette] DER DDR, Part 1, 1981, No 35, 9 December 1981, p 83)

Two major complexes of tasks can be read out of this statement, which are intended to make a major contribution towards reducing the demand for energy resources in general, but for liquid energy sources in particular.

First: Structural Changes within the Transportation System of the GDR

This complex of measures contains the new arrangement for dividing work among the branches of transportation based on considerations of energy economy.

The arrangement includes:

Shifting freight transportation from the road to the railroad, that is to say, the railroad and inland shipping will assume a greater share of domestic freight transportation and road haulage will be reduced. Some of the plans to implement this structural step are extensive utilization of the railroad's existing network and technical installations, priority electrification of lines, changing the form of traction used, optimal use of means of transportation, increasing the share of combined transport and the use of existing and/or construction of new branch lines.

Reducing the amount of road freight haulage performed by works traffic. The anticipated structural effect is that public transportation will perform a far larger part of the haulage now assigned to trucks.

The point of departure and energy-economic justification for restructuring the transportation system is the fact that the average consumption of diesel fuel of the carriers per million ton/kms is 45 tons for factory traffic, 37 tons for public vehicular traffic, 13 tons for the railroad and 7 tons for inland shipping. (Footnote 17) (Survey of indicators: "Calculations on the Effectiveness of Measures to Reduce Transportation Costs," Building Academy of the GDR, Institute for Technology and Mechanization--Central Office for Optimization of Transportation in Construction, Berlin, 1983. Cited in: Manfred Moltrecht and Armin Schroer: "A Technical Optimal Evaluation of Production Problems--Transportation--Optimizing with Alternative Carriers," in: DDR-VERKEHR, No 2, 1985, p 45) From the point of view of energy, transport by rail and inland shipping is about three times superior to that by road. The possibility of finding a replacement for the individual carriers under certain conditions is the presupposition for the rearrangement of the division of labor among the individual carriers. One of the primary conditions for replacing road haulage with the railroad and inland shipping is an adequate level of performance by these agents, or the willingness to introduce measures that can bring about a clear improvement in their performance. In this context, the electrification of 750 kms of line by May 1985 can only be a measure designed to create the appropriate conditions for a more extensive transfer of freight, although the largest portion of investment funds for the transportation system were used in the last 5-year plan period for this purpose and, as far as one can tell, will be used for the same purpose in the next 5-year plan period. (Footnote 18) (See "The 1000th Kilometer of Electrified Line by the 10th Party Congress," in: NEUES DEUTSCHLAND, 3 June 1985, p 3)

Second: Reducing the Transportation Demands of the Enterprises and Institutions Using the Transportation System

This objective is being realized by means of a rigorous program of conservation. The deputy minister for transportation of the GDR describes this avenue of intensification of transportation, keeping in mind the problem of replacement, as follows:

"Likewise our efforts are based on the clear recognition that only conservation will help in the long term, that in the interest of our continued economic development maximum conservation of energy, of oil derivatives in particular, can only be achieved by reducing transportation performance, because the requisite measures for energy substitution and reduction of specific consumption cannot be implemented in a timely fashion and on the broad scale that is needed. This finding is undisputed." (Footnote 19) (Dieter Woestenfeld: "Transportation and Energy," in: DDR-VERKEHR, No 12, 1982, p 401)

In the economic practice of the GDR this means reducing the demand for transportation to the "socially" necessary amount or distributing the availability of transportation on a restricted basis among those entitled to allocations by volume, time and structure. By projecting norms and indicators for transport planning, by the mandatory introduction of optimization in transportation and restriction of factory traffic, those using the transportation system are being deprived of the opportunity of requesting transportation performance at a level that meets their requirements. In this sense, intensification of

transportation means reducing the range of available transportation in domestic freight traffic. We will examine the problems that arise for those using the transportation system in greater detail below. (Footnote 20) (See Section IV) Basically, for the period from 1980 to 1984, the end result is that intensification goes along with reduction or is partially equated with it.

The two sets of problems in intensification of transportation can be defined more closely in the following objectives (Footnote 21) (See Otto Arndt: "The Tasks of Transportation from 1981 to 1985," in: DDR-VERKEHR, No 6, 1981, p 187 and H. Scholz: "Performance-Related Development of Production Consumption, Tendencies in its Development and the Tasks Awaiting State Guidance," in: DDR-VERKEHR, No 6, 1981, p 198):

- Reduction of specific expenditures for transportation by about 20 percent, which is the equivalent of 30 billion ton/kms
- Reduction of specific energy consumption by 35 petajoules. That is the equivalent of 6.5 million tons of unrefined brown coal
- Saving 35 million work hours annually in order to ensure the necessary increase in labor productivity of 3 percent annually
- Reducing specific material consumption by 3 to 4 percent annually, the equivalent of a reduction in production consumption of at least M 250 million each year
- Improving the quality and safety of transportation, handling, construction and maintenance processes and the working and living conditions of those gainfully employed
- Increasing freight transportation performance in domestic traffic to 107 percent, with a further dynamic growth in the volume of industrial goods production
- Shifting 15 million tons of freight from vehicular traffic to the railroad to save 400,000 tons of diesel fuel
- Implementing a growth in transportation performance with a 25-percent reduction in diesel fuel consumption and 22 percent less heating oil
- Reduction of specific energy consumption:
 - on the railroad by 28 percent
 - in maritime shipping by 13 percent
 - in freight traffic by 16.6 percent and
 - in inland shipping by 8 percent.

II. Priority Area for Intensification Railroad Freight Traffic

1. Specific Tasks and Unique Features of Railroad Freight Traffic

The rail network of the Deutsche Reichsbahn (DR) on GDR territory is 14,226 kms long, (see Table 5) only about half as long as that of the FRG, but has a higher density, 131 kms/1,000 km² compared to 115 kms/1,000 km² for the FRG and, compared with other European countries, it can be described as tight-knit. (Footnote 22) (Rainer Hopf: "GDR Freight Traffic Returns to the Rail," in: DIW WOCHENBERICHT, No 8, 1981, p 83)

and strategic importance of the branch lines. Since 1965 a total of about 1,400 branch lines have been closed, that is about 25 percent." (Footnote 46) (Erwin Kramer: "Die Entwicklung des Verkehrswesens in der DDR" [The Development of the GDR's Transportation System], East Berlin, 1978, p 171)

By concentrating freight handling at the junction stations for freight car loading, these stations assumed a part of the tasks of the branch lines. In 1979 there were 4,800 branch lines, 3,300 of them main lines and 1,500 secondary lines.

In the last 4 years a total of 280 new branch lines have been put in service, including closed down lines which were reopened and renovated. This gives the DR currently 4,607 branch lines, the longest of which is that at the Leuna works at 300 km. (Footnote 47) (See NEUES DEUTSCHLAND 4 June 1985, p 2)

The branch lines are used heavily in open face brown coal mining as pit branch lines, by chemical enterprises (e.g. the Schwedt Petrochemical Combine), enterprises in the construction industry (cement factories and enterprises in the construction materials industry), the ports of Rostock, Wismar and Magdeburg, and by enterprises in metallurgy, ore mining and agriculture. In the future an increasing number of smaller enterprises producing various types of goods are to use or share the branch line network as part of the shift of transportation to the railroad. There are plans to increase the number of access points to the rail network by renovation of existing points or by building new ones. (Footnote 48) (See Order Concerning the Construction and Operation of Branch Lines of 13 May 1985 in

However, precedence is presently being given to working the existing access points at optimal capacity. In order to open up the opportunity of rail transport to enterprises that do not have a branch line at their disposal, the track and handling capacities of the branch lines of several enterprises in one area are being used jointly. The amount of goods to be transported is increased, and it is possible to make full use of the branch lines' capacity and handling equipment. The use of modern, productive technologies for freight handling and train dispatching makes economic sense as a result. But it must not be overlooked that new construction, renovation and the maintenance of branch lines creates high expenditures for material and personnel.

There are a number of drawbacks for the co-users of branch lines, the many smaller and medium-size enterprises that have a small volume of freight, but are now dependent on rail transport by way of these ancillary lines. (Footnote 49) (In 1982 a total of 62 branch lines were newly put in service, 252 enterprises became co-users; in 1983 77 branch lines started operations, 251 additional enterprises became co-users. See Werner Schmidt, op. cit. p 324) For lack of assigned capacity for road transportation, they have to move goods by rail that are less or not at all suitable for it. The growth of the amount of interrupted transport, increases in turnaround time, growing damage to goods, making workers available for loading and unloading around the clock and higher administration costs are just some of the problems that are creating a burden on the users in the economy.

Table 5. Length of Lines Belonging to the Deutsche Reichsbahn

| | <u>Length in Kilometers</u> | | | | | | |
|-----------------|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | <u>1960</u> | <u>1970</u> | <u>1980</u> | <u>1981</u> | <u>1982</u> | <u>1983</u> | <u>1984</u> |
| Railroad lines | 16,174 | 14,658 | 14,248 | 14,233 | 14,231 | 14,226 | 14,226 |
| Main lines | 7,362 | 7,365 | 7,621 | 7,639 | 7,638 | 7,634 | 7,651 |
| Secondary lines | 8,812 | 7,293 | 6,627 | 6,594 | 6,593 | 6,592 | 6,575 |
| Standard gauge | 14,866 | 14,100 | 13,952 | 13,935 | 13,936 | 13,933 | 13,941 |
| Electrified | 708 | 1,357 | 1,695 | 1,808 | 1,930 | 2,096 | 2,321 |

Sources: Statistical Yearbook of the GDR 1984, p 212; Statistical Almanac of the GDR 1985, p 85.

A comparison of volume for the year 1983 shows that the DR generates a higher volume of transportation in railroad freight traffic, with 325 million tons of freight, compared with 310 millions tons in the FRG. (Footnote 23) (In 1979 the following figures were achieved: DR 303 million tons of freight, DB [Deutsche Bundesbahn] 371 million tons. Ibid.)

If the respective transportation performances are compared, the same trend emerges. In 1983 the DB achieved 57 billion ton/km, and the DR just under 55 billion ton/km. (Footnote 24) (Statistical Yearbook for the FRG 1984, p 228 [in the case of the numbers for the FRG, those for 1983 are provisional data]) With these figures as well, the comparison with 1979 shows that the development of the railroad's performance in the FRG was retrograde, because at that time 68 billion ton/km were counted, while in the GDR, as the result of the transportation industry's efforts to reduce average transportation distances, the same result was achieved as in 1983. This level of performance by the DR is the more notable, because the railroad of the FRG, including the pertinent communications network, has a higher level of technology available, about 40 percent of the railroad lines are electrified (GDR, 16.3 in 1984) (Footnote 25) (See Table 5) and about 43 percent of all the DB's lines have multiple tracks (Footnote 26) (Statistical Yearbook for the FRG 1984, p 289), while only about 24 percent of the DR's lines have multiple tracks.

The different development of freight carrying performance for the railroads in the two German states is an expression of different transport policies. In addition to the free choice of the means of transport, part of a market economy is the efficient development of individual carriers, which meets the differentiated requirements of the users for transportation. (Footnote 28) (See Ulrich Klimke: "Transport Policy in the Field of Relations between the FRG and the GDR," in: ZEITSCHRIFT FUER VERKEHRSSWISSENSCHAFT, No 1/2, Duesseldorf, p 59) A market economy has mechanisms at its disposal that made an "administrative" allocation of carriers superfluous. As in most highly industrialized countries, the change in the structure of goods led to an increase in road freight traffic and a decline in railroad transport in the FRG as well. In 1990, it is estimated that 75 percent of the total volume of freight will be moved by road. (Footnote 29) (See Peter Luensdorf: "Predicted Development of Freight Traffic in the FRG until the year 2000," in:

DIW WOCHENBERICHT No 22, 1982, pp 279-284. See "Wirtschaftlicher Strukturwandel und Verkehr" [Changes in Economic Structure and Transport], Beitrage aus dem Institut fuer Verkehrswissenschaft an der Universitaet Muenster, Vol 89, 1979, p 106) This corresponds to the economic development by which the share of bulk goods declines and that of high-grade products increases. The latter place special demands on transportation, so they are particularly suitable for transport by road.

As part of its intensification program, the GDR can exploit all the specific advantages that are available, without any doubt, to the railroad for its transport policy, but it will also be forced to accept the drawbacks of this carrier, or search for opportunities to minimize or eliminate them.

Unique Features of Railroad Transport:

The form of energy used can, in the case of the railroad, be best suited to the particular energy situation of a country. The use of domestic raw brown coal for the production of energy, in the case of switching traction to electrical energy, makes the railroad a "cheap" carrier for the GDR's economy, and one that is independent of imported sources of energy. A primary precondition for this is the use of locomotives having a range of power and performance. The GDR can satisfy this requirement to a small degree at present. The locomotives available for heavy hauling tasks have to be used everywhere, so that the desired conservation is not fully achieved.

Railroad transportation is especially suitable for carrying bulk freight over long distances. Except for coal and products of the construction materials industry, whose share of the total amount carried is currently about 50 percent, the GDR, like all highly developed industrial nations, is showing signs of a structural change in its manufacturing sectors. The share of high-value goods, goods from the chemical industry, the glass-, wood- and plastics-processing industries will tend to grow. With the implementation of the strategy for more refining in production, which is to be increasingly called for during the next 5-year plan, demands on transport quality will increase considerably. On the other hand, more refining will mean a reduction in material intensity, with a consequent reduction in transportation needs. The consequence of the structural change in manufacturing sectors is the production of goods which have varying transportation requirements and, for the most part, have a specific affinity for road transport. It will be difficult, if not impossible, for the railroad, as a carrier, to achieve the quality of transport that comes close to meeting these requirements from the point of view of express transportation and different handling requirements. The mutual dependence and tight interlocking within the industry of the GDR, as well as the relationships between the enterprises that follows the principles of balance projection (i.e. state allocation), viewed over the long term, can turn the absolute commitment to railroad transportation into an obstacle to the development of the entire economy.

The railroad can only exploit its performance potential fully if the flow of transport or freight is concentrated. To achieve this, the freight loads must be composed in such a way that non-stop trains can be made up. (Footnote 30)

(A through train assembled by the consigner or the collecting station, which travels directly, i.e. without being handled in a marshalling yard en route to the recipient or the distributing station. Freight cars moved in full trains are switched 2.2 fewer times at marshalling yards, saving 10 to 15 hours.) Only if full trains are assembled, can the energy-economic advantages of the railroad make their full effects felt. Efforts are currently under way to raise the share of full trains on the DR to 62 percent, in order to relieve the seriously overloaded marshalling yards. (Footnote 31) (See FAHRT FREI, East Berlin, No 4, 1985) But assembling full trains is not without its problems, both for the railroad and for the users in the economy. One requirement is the collection of freight so that full trains can be made up. This requires sidings and/or branch lines, as well as adequate loading and unloading capacity and handling equipment. The latter requires precise agreements on deadlines between the offices involved in the transport. Consideration must also be given to fluctuations in the volume of traffic, that is to say, it must be possible to have some influence on the assembly of the trains from an operational standpoint. (Footnote 32) (See "Handbuch Eisenbahn," East Berlin, 1970, Vol 1, p 505) For hauling bulk freight, such as fuel or construction material, full trains are proving to be a good opportunity for transporting freight more rationally. For other types of freight, however, they mean extending the time of transportation, i.e. limited availability. The increased load on marshalling yard capacity associated with assembling the trains signifies a bottleneck for the GDR, because the DR's sidings have already reached the limit of their capacity, in other words, the system is inadequate for managing the constantly increasing amount of freight. These difficulties are to be overcome by turning freight cars around more rapidly and by minimizing the times a car is switched. In addition, the expansion of the system as well as its reconstruction are urgent necessities.

The specific technological conditions of rail transport (the railroad has its own traffic network, and transport processes can be carried out simultaneously, sequentially or in conjunction with one another) and the economic necessity of making maximum use of the available high capital assets, bring about 24-hour utilization of the railroad's facilities, by the users in the economy as well. (Footnote 33) (In 1984 the inventory of transportation, the postal service and telecommunications made up 13.4 percent of the total inventory of the economy's capital assets. Source: Statistical Almanach of the GDR, 1985 p 32) Freight transport in particular can take place to an unlimited extent during the nighttime hours. This requires continuous loading and unloading of freight trains by the users in the economy. Planning the demand for and the supply of transportation assumes a continuous 7-day utilization of the means of transport. (Footnote 34) (See Part III) In practice this proves to be not unproblematic for the carriers as well as for the enterprises. Setting up a permanent standby duty staff when the enterprise is not operating, increasing the size of the transportation departments, paying bonuses for weekend and night work, using production workers for unloading jobs, these are just a few of the effects of increased rail transport. In addition, due to the railroad's shortage of vehicle capacity of its own, substantial problems result from coordinating with public transportation. This requires constant, almost hourly coordination between the participants and does not allow any change in plan. For the railroad too, the constant state of readiness needed means a consider-

able overload. The productivity of the enterprises is becoming increasingly dependent on the quality achieved in transportation, in the broadest sense. The railroad must, in the final analysis, meet these growing tasks with the same technical and technological means as before, if one ignores a possible growth in performance as a result of electrification. Continuous "around-the-clock" operation makes necessary repairs and required inspection, maintenance and service of its plant difficult. Within the foreseeable future, the railroad may well reach the limits of its performance.

(a) Electrification of the Railroad

Electrification of the railroad, which has been carried out more intensively since 1980, represents a serious move towards intensification of the transportation system in the GDR. The intent of electrification is to increase performance and achieve the projected energy economic goals. The electrification program is the DR's most important rationalization project in the current 5-year plan and it is the precondition for the planned change from diesel traction to electric traction. The intention is to catch up on what has basically been completed in both western and eastern [European] countries. (Footnote 34) (See Rainer Hopf, op. cit., p 89)

If one looks at the GDR within the community of the CEMA countries, it can be seen that the GDR is still among the "developing nations" with respect to electrification of the railroad. Steps to electrify the railroad began in all socialist states in the early 1960's (see Table 6) and were completed without serious interruptions. They reached a level that is comparable to western countries.

Although it is currently making great efforts in this area, the DR, with 16.3 percent of the total length of its railroad lines electrified in 1984, still clearly needs to catch up.

What reasons were there for this "belated reconsideration" of electrification, considering that until 1960 the GDR agreed with the other socialist countries about the advantages of this possible change in traction from what was then largely steam to electric traction. (Footnote 35) (See Werner Gumpel, "Das Verkehrswesen Osteuropas" [The Transportation System of Eastern Europe], Cologne, 1967, p 95) It was not until the early 1960's that the GDR departed from its original strategy of electrifying the railroad network. (Footnote 36) (In 1960 the percentage share of power for trains in 1970 was forecast as follows: steam, 50 percent; diesel, 10 percent; electric operation, 40 percent. The actual ratio was: steam 42.3 percent; diesel, 41.5 percent and 16.2 electric operation. Sources: G. Schilling and G. Tischer, "Energetic" [Energistics] East Berlin, 1960, p 295; Statistical Yearbook of the GDR, 1984, p 215) The clear favoring of diesel traction made electrification superfluous.

The reasons were as follows: with the construction of the Schwedt crude oil processing plant and later on of the Leuna II enterprise, together with the long-term agreement on crude oil shipments from the Soviet Union, the necessary capacity was available to produce the diesel fuel which was needed for the change from steam to diesel. The tendency to give preference to diesel

Table 6. Length of the Rail Lines in CEMA States and Proportion of Electrified Railroad Routes
1979 and 1983

| States | <u>Length of the Railroad</u> <u>Network in Kms</u> | | <u>Length of The Electrified</u> <u>Railroad Lines in Kms</u> | | <u>Of This Total</u> <u>Proportion of Electrified</u> <u>Railroad Lines in the Total</u> | |
|----------|--|-------------|--|-------------|--|-------------|
| | | | | | <u>Length of Rail Lines in</u> <u>Percent</u> | |
| | <u>1979</u> | <u>1983</u> | <u>1979</u> | <u>1983</u> | <u>1979</u> | <u>1983</u> |
| Bulgaria | 4,341 | 4,278 | 1,449 | 1,994 | 33 | 47 |
| USSR | 141,125 | 143,630 | 42,442 | 46,826 | 30 | 33 |
| Poland | 27,271 | 27,139 | 6,687 | 7,828 | 25 | 32 |
| CSSR | 13,142 | 13,141 | 2,989 | 3,221 | 23 | 25 |
| Romania | 11,113 | 11,115 | 2,202 | 2,868 | 20 | 26 |
| Hungary | 8,039 | 7,869 | 1,488 | 1,807 | 19 | 23 |
| GDR 2 | 14,164 | 14,226 | 1,621 | 2,096 | 11 | 15 |

50 1 A correct calculation gives 28 percent

2 Including the electrified route network of the GDR's major combines' works lines, with a length of 392 kms

Sources: Statistical Yearbook of the Member Nations of CEMA, published by the Secretariat of CEMA, Moscow (in Russian), 1979, pp 311-312; 1980, pp 275-276; 1984, p 239

was given additional support by the fact that in the early 1970's the Soviet Union was in a position to supply the GDR with diesel locomotives for heavy freight transportation. In addition, the GDR saw an opportunity to take the strain off its tightly stretched electrical energy balance and to make energy, which at that time was generated almost exclusively in coal-fired power stations, more available to industry. Production of electricity from nuclear power did not play a role until 1970. (Footnote 37) (Besides brown coal, with 82,6 percent, nuclear power had a 10.7 percent share of energy production in the GDR in 1983. See Statistical Yearbook of the GDR 1985, p 56)

An additional compelling reason for the turn away from electrification could be found in the fact that those responsible for it were hoping that they could avoid spending the money needed for investing in electrification and the not inconsiderable maintenance costs.

Investment is needed for the construction of substations (i.e. facilities to convert and distribute electricity to the overhead lines), for long-distance lines, overhead lines and feed lines, including the masts and foundations, also for overhead line commissions, circuit breaker and telecommunications facilities and for the necessary repair capacity in the railroad repair yards (RAW). Because of the desired increase in speed, rebuilding of the way (i.e. the railroad substructure, with the roadbed, ties and rails) is usually necessary.

By concentrating all available investment capital on equipment, this necessary evil was avoided, and an immediate and noticeable increase in performance was achieved without the delay which would have been associated with electrification.

Finally, the decision to go with diesel traction meant that the long-term necessity of electrifying secondary and branch lines could be avoided. Electrification means a restriction on the mobility of the driving unit because it is tied to the overhead network or the conductor rail. The diesel locomotive compensates for this shortcoming, because it can be employed equally on main lines, on secondary lines and on branch lines and is thus more versatile than the electric locomotive, which requires special operating conditions. It must also be taken into consideration that the present decision to electrify only the main lines assumes the use of a different type of traction for secondary and branch lines. The advantages of electric propulsion can only be fully effective on heavily traveled routes.

The decision made in the early 1960's in favor of diesel traction and thereby to neglect electrification was implemented with very few exceptions until 1980. If one looks at the rate of electrification by 5-year plan segments, 349 km were electrified between 1960 and 1965, about 300 km between 1965 and 1970, only 97 km between 1970 and 1975, but 241 km from 1975 to 1980. (Footnote 38) (Statistical Yearbook of the GDR 1981, p 200. See Hansjoerg Buck: "Priorities in Rationalization in the GDR's Transportation System until 1985," DEUTSCHLAND ARCHIV, No 5, 1981, p 496)

The reversal in thinking since the 10th Party Congress and the turn away from principles that had been practiced until then in the GDR's transportation policy once more initiated electrification of the most important means of domestic freight transportation, the railroad, but now with a 20-year delay. As a result, it was now possible to undertake a change in the method of traction (see Table 7). The number of electric locomotives in railroad freight transportation has risen from 20 percent in 1980 to about 32 percent in 1984. The advantages of operating electric trains, greater pulling power and performance, faster acceleration, longer operating life and lower energy consumption when compared with diesel traction, are urgently needed and are being used to meet the increased flow of goods. The fact, too, that the flow capacity of the routes usually increases with electrification can have a positive effect on the performance of the railroad as a transportation agency.

Table 7. Share of Different Types of Traction in Freight and Passenger Traffic on the Railroad 1950-1984 in Percent

| <u>Year</u> | <u>Share of the Types of Traction</u> | | |
|-------------|---------------------------------------|-------------------------------------|--------------|
| | <u>Electric</u> | <u>Diesel</u> <u>Locomotives</u> | <u>Steam</u> |
| 1950 | | 0.7 | 99.3 |
| 1960 | 4.9 | 0.7 | 94.4 |
| 1970 | 16.2 | 41.5 | 42.3 |
| 1975 | 16.4 | 62.5 | 21.1 |
| 1980 | 19.9 | 71.8 | 8.3 |
| 1981 | 22.1 | 72.3 | 5.6 |
| 1982 | 25.8 | 70.2 | 4.0 |
| 1983 | 28.4 | 67.9 | 3.7 |
| 1984 | 32.3 | 63.7 | 4.0 |

Source: Statistical Yearbook of the GDR 1984, p 215; Statistical Yearbook of the GDR 1985, p 88.

The electrification program, which is being carried out in the GDR under the slogan "Ride and Build" as a "youth project," has supplied the through line from the Baltic (Rostock) to the southern industrial areas and as far as the border with the CSSR (Bad Schandau) with "traction current." Without changing locomotives, or any other stops necessitated by operating equipment, and without increasing speed substantially, travel time can be reduced considerably by the use of electric locomotives. Eight of the 14 Bezirk cities in the GDR can be reached on electric trains, so they are linked with one another.

Completion of the planned second major north-south link (besides Rostock to Bad Schandau and Decin in the CSSR) from the industrial area around Magdeburg to Rostock by way of Schwerin will be left for the next 5-year plan 1986-1990, as will the electrification of the cross-link between Rosslau (Elbe) and Wittenberg. (Footnote 39) (See Peter Jochen Winters: "The Target is the 1000th Kilometer," FRANKFURTER ALLGEMEINE ZEITUNG, 3 July 1985 p 10)

Minister for Transportation Otto Arndt described the stage of completion already attained at the 10th SED Central Committee Party Congress in these words: "Electrification of our railroad lines forms the nucleus of an increase in productivity. The speed of implementation of the Politburo's decrees was raised substantially, so that the target of the directive of the 10th Party Congress was surpassed by about 200 km." (Footnote 40) (Otto Arndt: "Modern Equipment Increases Efficiency in the Transportation System," in: NEUES DEUTSCHLAND, 22-23 June 1985, p 13)

According to its own figures, industry in the GDR is capable by itself of meeting the demand for the electric locomotives that will be required for the change in traction. The VEB Hans Beimler Locomotive Building and Electrical Equipment Combine, Hennigsdorf is providing a 250-series 6-axle locomotive and its successor, the 243-series, for domestic needs. It meets a variety of performance requirements, particularly since there are no plans to increase the average speed of train travel as a result of electrification. The DR has introduced what is referred to as a recommended energy-conserving speed. It is designed to find the optimal relationship between the energy used and the amount of work performed. It does not exploit the performance capabilities of the locomotives to the maximum. The associated changes in travel time (frequently long travel times) are to be compensated for by corresponding driving techniques, i.e. rapid acceleration and extended coastdown. The increased use of microelectronics, i.e. the use of onboard computers, computer-aided central dispatching offices and microcomputers in the signal towers, is supposed to favor energy-conserving driving and, at the same time, make it possible to control vehicle deployment in order to rationalize the management of operations. (Footnote 41) (See Press Information from the Leipzig Spring Fair 1985--"Nachrichtentechnik" [Information Technology] 1985, p 5. Karl-Heinz Burghardt: "Changes in the Organization of Management in the Transportation Industry as the Result of Using Modern Management Techniques," in: DDR-VERKEHR, No 3, 1985, p 82)

Currently the entire transportation system of the GDR has 1,500 microcomputers at its disposal, which are used in dispatching processes for passenger travel, in traffic facilities, vehicles and robot systems. Plans for the next few years are for computer-aided technologies to form the nucleus of intensification processes in all areas of transportation. (Footnote 42) (See Otto Arndt: "The Transportation Policy of the GDR," in: DDR-VERKEHR, No 10, 1984, p 291) The implementation of this goal is proving to be all the more pressing for transportation in the GDR because the previous level of transmitting and processing all the information needed for the movement, warehousing and handling of freight is inadequate. Smooth communications between the point of origin and the destination, between all those involved in moving goods is of fundamental importance for intensification of transportation. The existing information system is particularly inadequate at junctions in the transportation process. (Footnote 43) (Junctions, or intersections--a point in the traffic network at which the lines of one or several branches of transportation cross or join up with each other. They are of special importance for changes in the means of transportation used. See "Lexikon Eisenbahn" [Railroad Dictionary], East Berlin, 1971, p 718)

Transportation and information have always belonged together and still belong together, and to neglect this causal relationship--for whatever reason--means wasting time and material. As a result, even the planned partial solutions will have only a limited success. The use of modern computing equipment is a basic precondition for a new distribution of tasks in the transport sector. Having to rectify what has been neglected means that certain fundamental associations have been ignored or not identified.

(b) Branch Lines (Footnote 44)

(Branch lines: "Nonpublic railroad, or one with limited public access, which is directly connected to the public transportation rail network Freight cars are moved by way of branch stations between the public transportation rail network and the loading and unloading docks of the one served by the branch line" "Lexikon Eisenbahn, p 48)

Transport customers have direct access to the DR's public rail system by way of branch lines. Branch lines are part of the DR's transport system, in 1983 they handled 88 percent of the loading and 77 percent of the unloading (Footnote 45) (Werner Schmidt: "Branch Lines--Part of the Unified Socialist Transportation System," in: DDR-VERKEHR, No 11, 1984, p 324) The increased use of existing branch lines and the reopening of those already closed is another important component in transport intensification. Only in this way will it be possible to implement the strategy of a sweeping shift in freight from road to rail and to contribute to reducing the economy's overall expenditures for freight transport. The advantages of branch lines, which have been the subject of renewed intense interest since the early 1980's, is that they make it possible to transport freight directly from the recipient to the sender [sic], that is, immediate handling between rail vehicles and the enterprise's internal means of transportation.

Until the commencement of the new transportation strategy, various criteria for efficiency, for example, an adequately high volume of transport and the workload associated with it, the location and the state of repair of the branch lines, whether they were equipped with adequate freight handling equipment, the labor force requirements and its management, these criteria and the properties of the different types of freight that made them suitable or unsuitable for the railroad were regarded as decisive in the closure, renovation or construction of branch lines. The "railroad wave" brought a new way of looking at things in its wake. Until then, the number of direct access points for the enterprises to the railroad network was reduced drastically, particularly because of the small volume of goods to be moved by this carrier. Small enterprises that did not meet the listed criteria were particularly hard hit. In 1978 this development was characterized as follows:

"The closure of unprofitable branch lines played a major part in the concentration of rail freight traffic. About 80 percent of all freight handled went to branch lines. But on every second one the volume of freight cars was less than 3 per day. Only 13 percent of the total volume was handled at two-thirds of the stations. Freight handling performance was only one criterion for deciding that a line should be closed. Other criteria were the economic and

and strategic importance of the branch lines. Since 1965 a total of about 1,400 branch lines have been closed, that is to say, about 25 percent." (Footnote 46) (Erwin Kramer: "Die Entwicklungssystem des Verkehrswesens in der DDR" [The Development of the GDR's Transportation System], East Berlin, 1978, p 171)

By concentrating freight handling at the junction stations for freight car loading, these stations assumed some of the tasks of the branch lines. In 1979 there were 4,800 branch lines, 3,300 of them main branch lines and 1,500 secondary branch lines.

In the last 4 years a total of 280 new branch lines have been put in service, including closed down lines which were reopened and renovated. This give the DR 4,607 branch lines at the present time, the longest of which is that at the Leuna works, 300 km in length. (Footnote 47) (See NEUES DEUTSCHLAND 4 June 1985, p 2)

The branch lines are used heavily in open-face brown coal mining as pit branch lines, by chemical enterprises (e.g. the Schwedt Petrochemical Combine), enterprises in the construction industry (cement factories and enterprises in the construction materials industry), the ports of Rostock, Wismar and Magdeburg, and by enterprises in metallurgy, ore mining and agriculture. In the future a growing number of smaller enterprises producing various types of goods are to use or share the branch line network, as part of the transfer of transportation to the railroad. There are plans to increase the number of access points to the rail network by renovating existing points or by building new ones. (Footnote 48) (See Order Concerning the Construction and Operation of Branch Lines of 13 May 1982 in SDr.[not further identified] Legal Gazette No 1080 of 31 December 1982, p 57)

However, precedence is presently being given to working the existing access points at optimal capacity. In order to open up the opportunity for rail transport to enterprises that do not have a branch line available, the track and handling capacities of the branch lines of several enterprises in one area are being used jointly. The volume of goods to be transported is increased, and it is possible to make full use of the branch lines' capacity and handling equipment. The use of modern, productive technologies for freight handling and train dispatching makes economic sense as a result. But it must not be overlooked that new construction, renovation and the maintenance of branch lines creates high expenditures for materiel and personnel.

There are a number of drawbacks for the co-users of branch lines, the many smaller and medium-size enterprises that have a small volume of freight, but which are now dependent on rail transport by way of these ancillary lines. (Footnote 49) (In 1982 a total of 62 new branch lines were put in service, 252 enterprises became co-users; in 1983 77 branch started operations, 251 additional enterprises became co-users. See Werner Schmidt, op. cit., p 324) For lack of assigned capacity for road transportation, they have to move goods by rail that are less, or not at all, suitable for it. The growth of the amount of broken transport, increases in turnaround time, more damage to goods, making workers available for loading and unloading around the clock and higher administrative costs are just some of the problems that are creating a burden on the users in the economy.

For the railroad dealing with the growing volume of freight transport by way of branch lines is similarly linked with higher demands. Increasingly freed from service tasks, which it would have to assume more broadly under a system that divides work within the transportation industry, it is restricting itself exclusively to shipping tasks. (Footnote 50) (Service tasks include offering customers complex solutions to problems in transport equipment and organization, for example, a direct house-to-house transport system, keeping to "guaranteed" shipping times, and also informational services as a contribution to improved control of customers' goods movements (vehicle information and preregistration system) These tasks include improved performance in taking freight cars to and fetching them from the branch lines, but also the assembly, movement and dispersal of trains. Considering the fact that at present only 10 percent of the shipping time is spent on the actual transport process and 90 percent on switching cars, marshalling and at a standstill, the ratio will very probably become even worse. (Footnote 51) (WIRTSCHAFTLICHER STRUKTURWANDEL UND VERKEHR, Goettingen, 89, 1979, p 223) The operational tasks of the railroad are growing with the increasing delivery of goods by way of branch lines. It has to guarantee an optimal operating cycle, improve the turnaround time for its freight cars (in 1984 it was 3.86 days), make more efficient use of its trains, guarantee punctual delivery and monitor customers' compliance with the planned transport sphere. (Footnote 52) (For this so-called customer accounts are being set up, which, tallied daily by hand, give the DR a running check on the utilization of the transport sphere by days. It is based on the quarterly report of the customer's transport needs. Conditions still do not exist to permit the use of electronic data processing. See FAHRT FREI, East Berlin, No 10/11, 1984)

These are tasks that are not just associated with the increased use of branch lines, but affect rail transport as a whole. As the number of customers making heavier use of branch lines and placing varied demands on this form of transportation increases, these tasks will grow considerably. Maintaining transport quality, i.e. the guarantee of undamaged freight, punctuality and shipping to the intended destination deserves greater attention. The same holds true for cooperation with vehicular traffic and transportation customers at the liaison offices in the transport chain. By offering improved services, for example, by expanding express freight and mixed freight traffic, the DR intends to make rail transport more attractive to its customers. In order to transport extremely urgent freight more quickly, a freight collection service was established, with about 160 connections. The goods are transported in through trains more quickly between the dispatch, reception and supply centers. (Footnote 53) (See Heinz Krueger: "Services Offered by the DR," in: DDR-VERKEHR, No 11, 1984, p 322)

2. Division of Work Between the Railroad and Vehicular Traffic

The GDR's road system comprises about 120,000 km, about 60 percent of which is made up of municipal roads. In the south the density is above average, in the north fewer roads serve the area. In 1979 road freight transport accounted for approximately 67 percent of the total volume of transportation and 26 percent of total productivity in transportation was accounted for by over-the-road freight traffic. Those were the conditions preceding the intensification of

transportation, whose measures are directed particularly at reducing road transport, which is costly in terms of fuel. By the end of 1984 this had been reduced to 58 percent and about 19 percent respectively (see Tables 2 and 3).

If one looks at the amount transported, the major part of road freight transport accrues to factory traffic. As Table 8 shows, it amounted to about 77 percent of total road transportation in 1979. With about 75 percent in 1984, it has not been possible to reduce its share substantially, but the total amount of freight carried by road was reduced during this period by approximately 23 percent.

The sharp increase in freight transport by road until 1979, particularly with vehicles belonging to the enterprises, can be attributed to the following: the transportation policy of the GDR until the beginning of the 1980's assumed that, as far as the division of work between the carriers is concerned, "the increase of the share of vehicular traffic in transportation performance matches a trend which has emerged in the majority of European countries. In the GDR many transportation assignments have been shifted to vehicular traffic in order to relieve the railroad." (Footnote 54) (Authors' collective, "Reproduktion und Verkehr" [Manufacturing and Transportation], East Berlin, 1982, p 159)

Table 8. Growth of Road Freight Traffic in the GDR for the Years 1960, 1970, 1979 and 1980 to 1984

| Year | Volume Shipped | | | | |
|------|------------------------|---------------------|---------|-----------------|---------|
| | Road Traffic | Public Road Traffic | | Factory Traffic | |
| | Total in Mill. Tons | Mill. Tons | Percent | Mill. Tons | Percent |
| 1960 | 270.4 | 131.5 | 48.6 | 138.9 | 51.4 |
| 1970 | 463.6 | 180.0 | 38.8 | 283.6 | 61.2 |
| 1979 | 730.3 | 166.6 | 22.8 | 563.7 | 77.2 |
| 1980 | 729.8 | 166.9 | 22.9 | 562.9 | 77.1 |
| 1981 | 692.7 | 162.9 | 23.5 | 529.8 | 76.5 |
| 1982 | 607.5 | 147.5 | 24.3 | 460.0 | 75.7 |
| 1983 | 584.1 | 141.7 | 24.3 | 442.4 | 75.7 |
| 1984 | 560.7 | 138.2 | 24.6 | 422.5 | 75.4 |

| Transport Performance in Bill.Ton/Km | | | | | |
|--------------------------------------|------|-----|------|------|------|
| 1960 | 5.0 | 2.6 | 52.0 | 2.4 | 48.0 |
| 1970 | 12.2 | 6.2 | 50.8 | 6.0 | 49.2 |
| 1979 | 21.6 | 9.7 | 44.9 | 11.9 | 55.1 |
| 1980 | 21.0 | 9.7 | 46.2 | 11.3 | 53.8 |
| 1981 | 19.9 | 9.4 | 47.2 | 10.5 | 52.8 |
| 1982 | 16.2 | 7.6 | 46.9 | 8.6 | 53.1 |
| 1983 | 15.4 | 7.3 | 47.4 | 8.1 | 52.6 |
| 1984 | 14.5 | 7.0 | 48.3 | 7.5 | 51.7 |

Sources: Statistical Yearbook of the GDR 1984, p 213
Statistical Almanach of the GDR 1985, p 86

In 1979 the growth tendency for road traffic was set out as follows:
"Absolute growth in transport volume and transport performance with further concentration on opening up new areas, resulting in cooperation with the railroad, shipping and air traffic." (Footnote 55) ("Economy of Transportation, p 123)

This clear favoring of road freight transport accorded with the efforts of users in the economy to exploit the advantages of vehicular traffic. One of its effects is to open up new areas, other advantages are a tighter traffic system, the ability to adapt in the face of structural changes in demand, the possibilities of direct, uninterrupted transportation, autonomous transportation processes, i.e. independently of other carriers or subsystems and in greater flexibility. But the fact that road freight transport is regulated by technological plans less than the railroad, for example, and the ability to adapt to the characteristics of the freight with regard to their transportation needs is there to a greater degree through the use of different vehicles has caused customers to give preference to movement by road. (Footnote 56)
(Technological plans--Binding rules for the practical flow of sub-processes in the rail system necessary for carrying out transportation processes. See "Lexikon der Eisenbahn," (p 272)

The structural change by sector, already mentioned, which increased the share of products that are particularly dependent on vehicular transportation because they require a specific method of handling, pushed the division of work between the carriers in the direction of road transport.

The inadequate quality, in the broadest sense, of the performance of the railroad and inland shipping as carriers is closely allied with this shift.

The ready availability of vehicles, which results from the enterprises having their own internal motor pool in order to compensate for breakdowns in materials delivery or in the transportation of their finished product, and the relative independence from planned and assigned transport capacity from "central office," makes having an independent motor pool as part of factory transport a given for conducting any business in enterprises in centrally administered economic systems.

What cannot be left out of consideration is that the almost unlimited "power of disposal" over the enterprises' transport capacity and the virtual absence of pressure to be efficient caused the enterprises to make generous use of road transportation as a carrier. Encouraged by the formation of the combines from 1978 to 1980, cooperative relationships were set up with no regard for the distances involved. Trucks were used to ship small amounts of material or spare parts over long distances or for private purposes, to name just a few examples.

Even the fact that some of the enterprises' own vehicles were antiquated, consequently extremely prone to breakdown and in constant need of repair and had a high fuel consumption did not result in increased use of the less expensive transport capacity of public vehicular traffic or the railroad.

Intensification of transportation put an end to this development and introduced a new way of looking at the benefits and drawbacks of road freight transport. A reduction in the percentage of long-distance traffic, greater use of public vehicular traffic, handing over the enterprises' vehicles to vehicle combines, the scrapping of worn out but still driveable vehicles, better utilization of tractors and truck trailers, the formation of factory ride-sharing groups, supplemented by a series of administrative regulations, are intended to bring about the change in carrier. The consequence is the need for better organization in the cooperation between the two carriers, railroad and road, within the framework of a joint freight transportation process, because there are expectations of rationalization effects on the economy as a whole from the combination of both partial systems, which is designated a transport chain.

Optimal utilization of the specific advantages of the two carriers, the high route performance of the railroad and the ability of road traffic to serve an area intensively, requires a high level of coordination. What has been inadequate control of processes at the junctions between both carriers is developing increasingly into an obstacle to a broad change in carrier. Experts evaluate the problem as follows:

"The great efforts and abundant exertion within the huge complex of "rationalization of transportation" will have only a limited effect if the questions of interfaces and their "networking" between the individual carriers and the users in the economy are ignored. It is here that the reasons must be sought why only administrative measures have so far succeeded in advancing the process of switching carriers." (Footnote 57) (Wolfgang Dehmelt: "Service Enterprises for Railroad Transport and Freight Handling for Industry--A Form of Cooperation in Industrial Transport in the USSR," in: DDR-VERKEHR No 6, 1985, p 186)

In the GDR, according to their own estimates . . .

"material-technical prerequisites in freight handling continue to be affected by a lack of investment, particularly in the transportation-intensive branches of the economy. The current development is characterized by an increasingly adverse age structure for the material. The inventory of equipment more than 10 years old is growing." (Footnote 58) (Karlheinz Beilner: "Economic and Legal Aspects of Coordinating Handling Processes in the Territory," in: DDR-VERKEHR, No 2, 1985, p 34)

Control of handling processes at junctions constitutes the major problem in the collaboration of the two carriers. Neither the users in the economy nor the railroad presently have at their disposal handling technologies and equipment that are adequate to meet the conditions of increasing amounts of "broken" loads, that is, more frequent changes of carrier. If one considers the fact that the cost of freight handling in 1984 constituted 10 percent of the economy's production consumption (5 percent for the public transport system and 95 percent for other areas of the economy), " . . . reducing expenditures for freight handling in conjunction with the rise of 'broken' transport [is becoming] a crucial link in lowering production consumption and raising the quality of the freight transport process." (Footnote 59) (Otto Arndt: "The GDR's Transportation Policy--An Expression of the Growing Importance of Transport as a Factor in Productivity and Growth and of Its Social Function in a Socialist Society," in: DDR-VERKEHR, No 10, 1984, p 293)

There are hopes that partial solutions can be derived from the joint use of handling facilities at the railroad's junction stations, from the creation of loading and unloading teams, from factory driving teams and also from a thorough rationalization of freight handling techniques. (Footnote 60) (See Heinz Schmidt: "The State of Regional Rationalization of Transportation and Trends in Development," DDR-VERKEHR, No 10, 1984, p 296)

The division of work between the carriers is being controlled through state organs both administratively and with economic means. Adherence to the prescribed limits is to be ensured by means of a newly enacted traffic law, normative guidelines for volume, performance and distance of transportation, graduated increases in transport prices and sanctions for non-compliance with the guidelines. (Footnote 61) (See Section III) Special priority is being given to stricter observance of the 50-kilometer distance limit for road traffic. In addition, starting in mid-1985, all goods that are transported by road locally, starting at a distance of 30 km, from one Bezirk to another, are subject to coordination. (Footnote 62) (See "Legal Gazette of the GDR," Part I, No 12, 10 May 1985 (Ordinance on Coordination) Tasks relating to the division of work for factory traffic and public vehicular traffic will also have new regulations. (Footnote 63) (Ibid., paragraph 6, p 143)

The application of administrative methods makes clear that the measures introduced earlier for indirect (economic) guidance have not sufficiently encouraged the formation of sensible transportation chains. As long as shippers do not derive any tangible economic benefits from giving up this type of transportation chain, efforts to find a solution to the problem of how to divide the work will have to be made with the assistance of administrative measures. Besides, it is already clear that as the result of a greater number of interruptions in shipping, given the current level of expertise with these processes, an increase in total expenditures can be expected.

The goal of conserving diesel fuel by means of more extensive exploitation of domestic energy sources has been achieved. But account must also be taken of the fact that this conservation effect was brought about in many cases without any consideration being given to the growth of total expenditures.

Combined Traffic

Combined traffic, in the shape of container transportation, represents a special form of collaboration between the railroad and vehicular transport, because it is particularly suited to carrying out the immediate assignment of intensification of transportation. In active use in the GDR since 1968, the container system is developing under present conditions into a service area with increasing importance for transportation. Particularly advantageous when transporting irregularly shaped goods, it is opening up possibilities for a broad shift in transportation and the rationalization of transportation processes. It has the following advantages: shipping goods by way of one or more carriers without transferring the contents, savings in packing costs, rationalization of internal transportation at the enterprise and of warehousing technology, prevention of freight damage, a reduction in the need for labor during transshipment of the freight and the capability for automation of the transshipment process.

However, transportation chains of this type function only under certain conditions. Besides an adequate number of containers to ensure unhampered circulation and their maximum utilization, they include high-capacity handling facilities, an adequate vehicle pool for both carriers and a suitable network of transshipment sites. The application of modern technologies and handling equipment, the use of process computers for the independent control of transshipment installations and arrangement of shipments are additional important prerequisites for blending the advantages of container transportation with the requirements for intensification of transportation as traffic volume increases.

As can be seen from Table 9, showing the development of container shipping, there was a growing demand by shippers for the opportunities of combined traffic in the period between 1980 and 1984. The number of containers shipped increased by almost one-half. The volume of freight carried increased by the same amount. The result was evaluated officially as follows:

"In the period from 1980 to 1983, as the result of a more intensive use of transport and handling facilities and of the expansion of the container pool, it was possible to achieve the largest increase in performance since the introduction of container traffic in the GDR. With an increase in performance of about 40 percent, which includes the shifting of 1.3 million tons from road freight traffic to transportation by container, a substantial contribution has been made to a more efficient division of work between the carriers from an energy-economic perspective." (Footnote 64) (Otto Arndt: "The Transportation Policy of the GDR," p 291)

Currently the DR has a total of 31 container stations at its disposal, which make direct house-to-house transportation possible, 70 stations are approved for railroad delivery of large containers, among which are 11 transshipment sites where delivery and pickup of containers right to the customer's loading site and back is possible. However, the available capacity of the access points and stations is still inadequate for any marked expansion of container traffic. An increase in the number of access points and expansion of the stations that are approved for container traffic are unavoidable for increasing container transportation.

If one looks at the percentage of container shipments in the total volume of freight and total performance, there has certainly been a steady increase since 1970, but in volume only 0.1 percent was carried in 1970 and 0.5 percent in 1984 (0.3 percent and 1.3 percent of performance). The share of total railroad transport remains within modest limits (see Table 9). From this perspective, the demand of responsible politicians in GDR to expand container transport is understandable. There are, after all, hopes of expanding the possibilities for mechanization and automation of transportation as a result of using containers and thereby increasing productivity and eliminating the heavy physical labor still involved in transportation.

The solution to this problem seems all the more urgent, because three-fifths of the containers' total running time is still needed for transshipment and storage. (Footnote 65) (See round table discussion on the topic "Tasks in Container and Mixed Freight Transportation," in: DDR-VERKEHR, No 5, 1983, p 130)

Table 9. Container Shipments By Rail for 1970, 1975, 1980 and 1981 to 1984

| <u>Year</u> | <u>Number of Containers Shipped (1,000)</u> | <u>Volume of Freight Shipped (1,000 tons)</u> | <u>Percentage of Total Volume of Freight Transport</u> | <u>Percentage of Rail Freight Transport Volume</u> | <u>Freight Transport Performance (Millions of Rate ton/km)</u> | <u>Percentage of Total Freight Transport Performance</u> | <u>Percentage of Railroad Transport Performance</u> |
|-------------|---|---|--|--|--|--|---|
| 1970 | 185.5 | 890.3 | 0.1 | 0.3 | 178.7 | 0.3 | 0.4 |
| 1975 | 358.3 | 2,035.5 | 0.2 | 0.7 | 423.4 | 0.6 | 0.9 |
| 1980 | 486.5 | 2,935.2 | 0.3 | 0.9 | 664.1 | 0.8 | 1.2 |
| 1981 | 482.1 | 3,024.2 | 0.4 | 1.0 | 715.1 | 0.9 | 1.3 |
| 1982 | 552.5 | 3,495.6 | 0.4 | 1.1 | 795.2 | 1.0 | 1.5 |
| 1983 | 639.9 | 3,934.5 | 0.4 | 1.2 | 903.0 | 1.2 | 1.6 |
| 1984 | 697.7 | 4,451.1 | 0.5 | 1.3 | 1,046.2 | 1.3 | 1.8 |

Source: Statistical Almanach of the GDR 1985, pp 86, 88

The DR requires almost 30 percent of the capacity at the container handling sites to move the containers from one train to another. (Footnote 66) (Ibid., p 131) If these crucial weak spots in container transportation are not eliminated, limits will be imposed on the further expansion of this transportation system in domestic freight traffic. Similar obstacles are posed by high container downtime, by a failure to make maximum use of their space and weight capacity and unsatisfactory use of the load length of the freight cars. These inadequacies are a result of a lack of prerequisites and poor preparation on the part of both the carriers and the shippers for container transport. Specific conditions are attached to transportation using containers, and their observance determines the efficiency of this transportation system. The most urgent tasks at present, both for the railroad and the enterprises who make up the shippers, are to raise the technical level of the transshipping installations, to improve the technology and to increase the number of containers. The conditions, principles and methods, as well as the sanctions for violations in container transport, are laid out in the Freight Transport Regulations (GTVO) (Footnote 67) (Legal Gazette of the GDR, Part I, No 2, 2 February 1983, fifth implementing regulation)

The use of small containers and pallets is also set out in these regulations. (Footnote 68) (Ibid., sixth implementing regulation) There are hopes that the heavier use of small containers and pallets by the shippers will bring about further rationalization of container transport. The intent is to achieve "annual growth rates of 12 to 15 percent" in the use of all types of containers in domestic freight transport (Footnote 69) (Otto Arndt: "The Transportation Policy of the GDR," p 293)

3. Division of Work Between the Railroad and Inland Shipping

If it was possible to register a positive balance overall, considering the railroad's goals of traffic intensification, the determination with respect to inland shipping is that no final breakthrough has been achieved here.

As can be seen from Table 10, there was an increase in the volume of transport of 2.4 million tons and in performance of 0.4 billion ton/km in 1984 compared with 1980, but no substantial increase in transportation was achieved on the GDR's inland waterways.

Table 10. Performance Growth for Inland Shipping in 1960, 1970 and from 1980 to 1984

| <u>Year</u> | <u>Volume of Freight Carried</u> (Million Tons) | <u>1960 = 100</u> | <u>Transportation Performance</u> (Billion ton/km) | <u>1960 = 100</u> |
|-------------|--|-------------------|---|-------------------|
| 1960 | 12.6 | 100.0 | 2.3 | 100.0 |
| 1970 | 13.7 | 108.7 | 2.4 | 104.3 |
| 1980 | 16.3 | 129.4 | 2.2 | 95.7 |
| 1981 | 16.6 | 131.7 | 2.4 | 104.3 |
| 1982 | 16.8 | 133.3 | 2.3 | 100.0 |
| 1983 | 17.5 | 138.8 | 2.4 | 104.3 |
| 1984 | 18.7 | 148.4 | 2.6 | 113.0 |

Source: Statistical Yearbook of the GDR 1984, p 213, Statistical Almanach of the GDR, p 86

A proven means of transportation for bulk freight traffic, inland shipping presently carries bulk freight whose share of its total volume is between 70 percent and 95 percent. The freight includes construction materials, solid fuels, ores, metals, waste products, agricultural products and those of the food and luxury goods industries, but also increasingly machinery and equipment. There are supposed to be areas in which containers can be used, which at the present time are carried in only small numbers on inland waterways.

In 1984 the GDR had 1,675 km of main waterways and 644 km of secondary waterways, 566 km of canals and 1,287 km of regulated and channeled stretches of river, with 466 km which alternate between stretches of river, canal and lakes. (Footnote 70) (See Statistical Yearbook of the GDR 1985, p 85)

By comparison with the FRG, whose inland waterways are almost twice as long, 4,429 km, of which 2,989 km are rivers and 1,440 km canals, the GDR is not in a bad position in this respect, with 21 km of inland waterway per 1,000 km², compared with 17 km in the FRG. In spite of these favorable conditions, inland shipping has not been used much for freight transportation. While 7.9 percent of the volume of freight carried in 1984 in the FRG and 20.8 percent of shipping performance went to this branch of transportation, the GDR managed only 1.9 percent and 3.4 percent in the same year. (Footnote 71) (See Tables 2 and 3) According to estimates by experts in the GDR "the major portion of the waterways is used less than 50 percent, if night non-operating times are included the use factor drops even further." (Footnote 72) (Astrid Kroeger: "The Role of Inland Shipping in the Carrier System," in: DDR-VERKEHR, No 7, 1984, p 214)

In comparison to other socialist countries--in the CSSR this carrier took 3.2 percent, in Hungary 4.5 percent of total transport performance--the same low utilization of this carrier emerges. (Footnote 73) (Ibid.) Even if imminent energy-economic problems make carrying freight on inland waterways more attractive once again, since this involves the lowest specific expenditure of energy (the ratio of energy expenditure per unit of performance among the three carriers, inland shipping, railroad and vehicular traffic is 1:1.25:4) and there are consequently cost advantages (Footnote 74) (The cost advantages of inland shipping are based on the following: Natural traffic routes (waterways) are used, costs are lower for route construction compared with other carriers; greater capacity of the container; optimal ratio of dead weight to payload; slower speeds result in lower energy consumption per unit of performance), there are a number of objective reasons and obstacles in the way of a broad shift of freight from road and rail to the waterways:

Inland waterway transport is particularly suited to non-express freight.

Moving the freight more quickly, and therefore raising speeds, would have a negative effect on energy requirements, the need for labor and not least on the environment (embankments and riverbed reinforcements). Only smaller ships could be made available, and the extent of transportation would be correspondingly reduced.

In order to provide more noticeable relief for road freight transport and the railroad, more goods that are not under any pressure of time, that is, they

have the typical characteristics for inland shipping, have to be carried on the waterways. Mechanical engineering products might have some limited suitability. It would have to be taken into consideration whether the costs for their multiple transshipment can be justified from the viewpoint of the entire economy and whether any energy-economic benefit results.

In spite of these limitations, there are possibilities open to inland shipping to make better use of the available operating time. Reducing all types of lay-over time and controllable downtime and repairs, raising the ships' operating time, the introduction of multiple shift operation and the use of computer-aided systems for fleet control would make it possible to increase the amount of time under way, which at present does not even amount to 25 percent of the total annual work time, and thereby create capacity for the shift of transportation.

If inland shipping takes more goods, it will be necessary to expand the existing points of access to the waterway network.

This applies to factory-owned access points (such as harbors, transshipment sites or loading sites for the construction industry) which are the starting point of ship transportation for the shipper and the end point for the user. Pre- and postruns by the railroad or vehicle traffic are not necessary. These access sites specialize in the appropriate type of freight, as do the handling installations. On the other hand, in order to load goods from the supply area that would be suitable for inland shipping at factory-owned access sites, special installations for transshipment would have to be set up both with the shippers and with inland shipping. In each case the necessary delivery and pickup would increase the extent to which transportation is interrupted. The possibility of joint use of factory-owned transshipment points has either not been put into practice or only to a limited degree.

Table 11. Transshipment of Goods in the Inland Ports of the GDR from 1960 to 1984

| Year | Transshipments (million tons) | | | | | |
|------|-------------------------------|------------|-------------|------|-------------|-------------|
| | By Port Authority | | | | | |
| | Total | Upper Elbe | Middle Elbe | Oder | East Berlin | Other Ports |
| 1960 | 13.0 | 1.8 | 3.9 | 3.7 | 2.4 | 1.2 |
| 1970 | 15.8 | 2.3 | 4.7 | 4.0 | 2.4 | 2.4 |
| 1980 | 17.0 | 3.4 | 5.0 | 4.5 | 2.4 | 1.7 |
| 1981 | 17.2 | 3.5 | 5.2 | 4.7 | 2.1 | 1.7 |
| 1982 | 16.9 | 3.6 | 5.1 | 4.6 | 1.8 | 1.8 |
| 1983 | 18.5 | 3.8 | 5.8 | 4.8 | 2.2 | 1.9 |
| 1984 | 20.2 | 3.9 | 6.6 | 5.1 | 2.7 | (1.9) * |

* Calculated as a difference

Source: Statistical Yearbook of the GDR 1984, p 223; Statistical Almanach of the GDR 1985, p 90.

Full utilization of the available transport area is closely linked to the low number of factory-owned access points. As studies, for example, of the catchment area of the Saale have shown, the flow of goods in inland shipping is uneven here, because there are more shipments out. (Footnote 75) (See Uwe Bittenbinder and Reinhard Schroeter: "Regional Studies on the Increased Use of Inland Shipping," in: DDR-VERKEHR No 4, 1985, p 103)

For reasons of energy economy, it is important to reduce the number of trips made with no cargo, that is, to organize return transportation as well. This would be possible through expansion of the access site network.

Access sites to the waterway network also exist through inland ports, which manage the exchange of goods between the carriers and represent junctions in broken transportation. Table 11 shows the extent of transshipment of freight by port installation, with the ports of the Middle Elbe administrations, among which is the largest inland port in the GDR, Magdeburg, carrying the major share (construction material, coal, ores, animal feed and fertilizers and agricultural products).

For shippers, insofar as they do not have factory-run access sites at their disposal and are dependent on the freely available ones, transport by ship is attractive only in the catchment area of the inland ports. If this area is already well served by the railroad, an extra change of carriers means an increase in transportation costs that cannot be justified.

In the catchment area of the Saale, for example, a single public access site in the port of Halle/Trotha and 10 specialized factory transshipment sites face a total of 51 DR freight depots with a multiplicity of main and secondary connectors. (Footnote 76) (See Uwe Bittenbinder and Reinhard Schroeter, op. cit., p 105) The factories' handling facilities specialize in railroad transportation and could not be used for inland shipping in the event of a change in carriers.

Another condition that makes a broad shift in transport to inland shipping more difficult is that the capacity of the existing inland ports, as well as the technical and technological level of the transshipping facilities is inadequate. The cargo handling facilities are antiquated and require urgent modernization and expansion. In the period between 1971 and 1975, this carrier had 0.4 percent of the total volume of investment for transportation at its disposal. There is no reason to believe that the percentage of investment for inland shipping will increase in the next 5-year plan periods and that it could consequently contribute to fundamental changes. A noticeable jump in performance and greater attractiveness for inland shipping would be possible, if the access sites to the waterway network were expanded in number, if bends in canals and rivers were widened, the capacity of locks were increased, the percentage of push tugs were raised and older ships were scrapped. Overall, comprehensive modernization of inland shipping cannot be avoided, if the constantly growing number of tasks is to be managed.

To achieve this, investment capital would have to be made available to improve the propulsion and operating systems and the embankments. The chronic lack of

investment funds, which will continue into the foreseeable future, will very probably grow into an increasingly formidable barrier to any further improvement in the performance of this carrier.

Another reason for the previous and continuing comparative lack of use of inland waterways can be found in the alignment and state of development of the network.

In a north-south direction the major waterways of the Elbe and the Oder run through only part of the GDR, and their principal transshipment areas, the river estuaries, are likewise outside its territory. Similar conditions obtain in the case of the canal system, which takes an east-west course and is consequently of limited importance. (Footnote 77) (See Bernd Spindler: "See- und Binnenschifffahrt der DDR" [Maritime and Inland Shipping of the GDR], Gesamt-deutsches Institut, Bundesanstalt fuer gesamtdeutsche Aufgaben, Bonn, 1980)

The crucial problem, however, is the location of deposits of raw materials and the existing site structure. The large industrial regions in the south have no access to the waterway network, their manufactured goods are unsuited to transportation by water. Inland shipping also faces an objective barrier in that the seaports of Wismar, Rostock and Stralsund are not linked to the inland waterway network. As a result, a great part of the goods that are suitable for inland shipping is inaccessible, and a shifting of goods can only take place in the area opened up by shipping with the already existing goods structure. Plans for a shift in transportation on a broad scale encounter objective limits as a result.

4. Rate Policy Measures

New rates, which replace those from 1967, have been in force for domestic freight traffic since January 1982. They do not apply to the population at large, craft cooperatives, private artisans and tradesmen, the self-employed and freelancers, as well as agricultural enterprises and installations.

The objective is to bring about the division of work between the carriers that the political leadership is aiming for by means of a differentiated increase in freight rates and a change in the system of setting rates. The intent is to match the price increases in the energy sector with an average increase in rates of 50 to 60 percent, and 80 percent for long-distance road traffic. The increased costs for freight transportation resulting from the application of the rates is intended to force the enterprises among the users to make "economical use" of transportation and to reduce their demand for transport. The official description of this objective is:

"The new domestic traffic rates are intended to lend effective support to the national economic task of reducing specific transportation requirements while implementing the process of reproduction." (Footnote 78) (Joachim Leyendecker: "New Rates for Domestic Freight Traffic in the GDR," in: DDR-VERKEHR No 12, 1981, p 409)

In accordance with the rate changes, shipments over the longest distances carry the highest rates and railroad shipments have lower rates compared with shipment by road. In the same way, shipments by inland waterway carry lower rates

than the railroad. (Footnote 79) (See Johannes Tismer: "Economic Policy Strategy for Intensification in Domestic Freight Traffic of the GDR," p 16)

The rates were staggered, the increases amount to:
 --55 percent for railroad shipments by freight car
 --79 percent for freight shipments locally by vehicle, 81 percent for long-distance transport.

This substantial price increase is clearly intended to make the railroad more attractive as a carrier to the enterprises from an economic standpoint.

Container transportation is also being promoted. The 59-percent increase in transportation by rail and the 63-percent increase in road transportation supports this objective.

Freight transportation on inland shipping show the smallest increase. Prices for shipment on this carrier increased only 47 percent, representing an economic spur for shippers.

The example of shipments of brown coal briquets by rail illustrates both the basic traits of price setting and the scope of the changes in price (see Table 12). In it the previously applicable rate scales of the German Railroad Freight Rates (DEGT) are compared to the new rates for freight car loads (TWE).

Table 12. Comparison of the DEGT Price Level (as of 31 December 1981) and of the TWE

| Type of Goods/Class of Goods: Brown Coal Briquets DEGT: 4 M | | | | |
|---|--------------------|--------------|--------------------|---------|
| TWE: 4 A | | | | |
| Weight: 26.5 tons | | | | |
| Vehicle: 2-axle freight car | | | | |
| Distance (km) | Freight in M | | Freight Difference | |
| | DEGT (previous) | TEW (new) | M | Percent |
| 50 | 146.30 | 152.00 | 5.70 | 3.9 |
| 100 | 212.50 | 303.00 | 90.50 | 42.6 |
| 200 | 345.00 | 607.00 | 262.00 | 75.9 |
| 400 | 610.00 | 1,212.00 | 602.00 | 98.7 |
| 600 | 875.00 | 1,818.00 | 943.00 | 107.8 |
| Weight: 53.0 liters | | | | |
| Vehicle: 4-axle freight car | | | | |
| 50 | 292.50 | 292.00 | 0.50 | 0.2 |
| 100 | 425.00 | 583.00 | 158.00 | 37.2 |
| 200 | 690.00 | 1,166.00 | 476.00 | 69.0 |
| 400 | 1,220.00 | 2,332.00 | 1,112.00 | 91.1 |
| 600 | 1,750.00 | 3,493.00 | 1,743.00 | 99.6 |

Source: Erhard Grahl: "Rates on the Railroad," in: DDR-VERKEHR, No12, 1981 p 414

III. Intensification Measures in Individual Industries

1. Planning Organization

An important measure in the move for intensification is the reduction of demand among the enterprises that ship their products for transportation. The cutback in demand is to apply to all carriers, but to road traffic in particular, in order to accomplish the desired shift of shipments from road to rail.

Because the enterprises did not limit their demand, a series of administrative measures was introduced, starting in 1980, to accomplish this objective, which affected the economy as a whole. By means of state control, and with the help of constantly tightening regulations and the appropriate ordinances to enforce them, the enterprises were induced to reduce their transportation requirements considerably. Most of the officially calculated conservation figures for transportation were arrived at in this way. The basis for determining demand is the "socially acknowledged need for transportation," i.e., the enterprises' demand for transportation from the individual carriers is reduced to the level approved by the state. That means a further incisive restriction of the enterprises' independence, because the interests of individual industries are given less and less consideration and they have to subordinate themselves to the objective of the economy as a whole. The absolute limitation of demand for transportation further restricts the flexibility of the enterprises, reduces their ability to react, limits the opportunities to use their own vehicles as they see fit and makes them dependent on public carriers.

Transportation planning is at the core of the restrictions. The biggest savings in the GDR's transportation system are supposed to have been achieved as a result of organizational planning measures. Official figures show a reduction of transportation in domestic freight traffic of 4.5 billion ton/km just in the period between 1980 and 1983 as a result of the newly enacted transport planning and method of calculation. (Footnote 80) (See Gerhard Baer, Dieter Hahn, Veronika Meier and Joachim Piehl: "The Situation and Results in the Application of Transportation Indicators and Norms, with Basic Directions for the Further Development of Transport Planning," in: DDR-VERKEHR, No 1, 1985, p 5)

A priority in the regulations that have been introduced is the application of transportation norms and indicators, which form the basis for planning transportation needs. The Regulations on Transport Balance Projection (TBAO) stipulate that the enterprises have binding limits imposed on them in the form of transportation indicators in order to utilize the services of branches of public transportation in order to prepare their transport plans. (Footnotes 81 and 82) (Regulation concerning the determination of transportation requirements and their balancing, Legal Gazette, I, 1982, No 7, p 154) (Planning regulations from 1986 to 1990, starting in 1986, foresees the establishment of an independent planning section for transportation as part of the operational plan, as well as the preparation of transport balance projections for the territories, for each Bezirk, and for the GDR. The TBAO will be dropped when the planning regulations become effective. See the regulation on the organization of planning the economy of the GDR from 1986 to 1990 of 7 December 1984, Part D, Legal Gazette of the GDR, reprint No 1190 d.)

See Authors' Collective; "Planungsordnung 1986 bis 1990" [Planning Organization 1986 to 1990], Series: Blickpunkt Wirtschaft, East Berlin, 1985, pp 76-80)

The transportation indicators "for the utilization of freight transport services" also contain specific objectives to reduce the economy's expenditures for transport and to optimize the connections between transportation and supply "and estimates for shifting long-distance shipments from road freight traffic to the railroad or inland shipping." (Footnote 83) (Regulation concerning the determination of transportation requirements, loc. cit., paragraph 4, p 156)

These regulations are new to the extent that until now the enterprises only drew up a capacity balance projection for factory traffic annually, and transport indicators were established only for selected types of goods for the public carriers railroad and inland shipping when they drew up their transport plan. The shippers' transportation requirements were largely met, i.e. the carriers had an unlimited obligation toward their customers.

Since 1984 new rules have also applied to the monthly report to the Central State Administration for Statistics concerning compliance with the indicators handed down. In this way the state maintains a running check on the transportation utilized, the amount and the costs. (Footnote 84) (Central State Administration for Statistics: "Guideline for Calculating Transport Indicators for Shippers," valid starting in 1984.)

Violations of the indicators which cannot be justified from the standpoint of the economy have drawn sanctions since 1984. (Footnote 85) (Order (AO) of 14 December 1983 concerning further economic measures to reduction transportation in the economy. Legal Gazette I, No 34, p 336; AO of 14 February 1984, Legal Gazette I, No 5, p 71)

Legal regulation of planning transport costs for the utilization of public freight traffic and for making shipments in factory traffic has also been in force since 1984. It obligates the enterprises to authenticate their transport costs according to a value figure. Transport costs are planned per M 1,000 of goods produced, both for utilizing public transportation as well as factory traffic. Planning factory traffic costs has to include all the costs accruing for carrying this out with the factory's own vehicles, and that includes intraplant traffic. (Footnote 86) (AO No 4 of 31 March 1983 on the supplement to the order for planning the economy of the GDR from 1981 to 1985, Legal Gazette SDr [not further identified] 1122 XV, p 67, para 4; AO No 4 of 31 March 1983 on the overall guideline for planning in combines in industry and construction, Legal Gazette, SDr. 1122, p 88, para. 8.2)

The drawing up of transportation norms has been mandatory for transport-intensive branches of the economy since 1983 and, since the beginning of 1984, for all enterprises that have to participate in transport planning. (Footnote 84) (AO of 1 April 1983 on the use of norms to improve planning, accounting and control of transportation expenditures in the national economy--Transportation Norm Order (TNAO), Legal Gazette, I, No 10, p 122) Enterprises and combines using the transport industry that demonstrate an annual transportation

requirement above a volume of 1,000 tons have to draft proposals for transport norms. In the case of works traffic, the cutoff for having to draw up norms is enterprises with a factory vehicle pool having a payload above 10 tons (applies to vehicles above 4 tons).

They have to determine the transport norms as a ratio between performance, volume and costs at a base figure (usually production of goods).

In connection with the drafting of transportation norms, the shipping enterprises and combines are obligated to prepare their transportation needs with particular attention to planned or anticipated changes (for example, changes in the amount of cooperative effort, the average shipping distance, possible shifts in transportation and in the mandated conservation figures) (Footnote 86) (In addition to the ministries for the trades industries, the Bezirk and Kreis councils and the combines and enterprises under their jurisdiction are also obligated to draft norms, as well as the Ministries for the Construction Industry, Transportation, Agriculture, Forestry and Foodstuffs, and Trade)

The proposals from the enterprises are compared with the possibilities for their realization by the organ in charge of balancing and communicated to the enterprises in the form of indicators as a "balanced claim for the provision of services" so that they can draft their transportation plans. This means that discrepancies can arise between the enterprise's overall transportation performance requirements and its need by carrier, as well as the possibility of meeting these requirements. This form of "compulsory allocation" has to achieve results in conservation, because only as much is allocated as is considered urgently necessary by the particular balancing organ from the perspective of the national economy.

This compulsory method of operation in transportation, implemented by means of a variety of different administrative regulations, not only damages the economy's ability to adjust. It makes the economy even more sensitive and subject to breakdowns in different ways, because as a result of the absolute leveling, in terms of capacity and structure, of the figures for volume and use of goods transport, the creation of reserve capacity, or a shift to other carriers, is almost impossible.

Apart from this more acute overall problem, there are a number of individual problems for the enterprises using the shipping industry. A more detailed description of them follows at this juncture:

--A prerequisite for determining transportation needs is the analysis of previous utilization of transport performance using individual indicators, but also by time periods and from the perspective of the receiver and the shipper. Due to the lack of a suitable computing base, this analytical activity has been carried out manually for the most part. It is, consequently, time-consuming, inaccurate and does not meet requirements in many respects. The same difficulties arise with the officially mandated accounting.

--The enterprises have to draft the planning documents for transportation at a time in the plan year when there has often been no final clarification of the

production program, the percentage of exports in total production, the allocated balance amounts for materials and premanufactured products, the suppliers or even the buyers. The quality of transport planning depends on just such information. The more inaccurate the input data, the less reliable the result--the transport plan--will be. The difficulties become even greater in drafting the 5-year plans for transportation.

--The constant requirements associated with planning to reduce transportation costs will very probably turn out to be a growing problem. The reserves that can be tapped relatively easily are largely exhausted, considering the extent of the previous reduction. At the very latest from that point on, the question arises whether absolute conservation forecasts can be justified, either for individual industries or the economy as a whole, and when the limits have been reached.

--The increased practice of allocating shipments by rail, as well as the continuous reduction of amounts of fuel, usually occur independently of the specific transportation requirements of the individual goods. Paramount is the strategy to bring about a shift, which is to be implemented and for which an account must be prepared, without adequate consideration of the resulting problems, i.e. critically examining costs and results.

--Difficulties also arise for the enterprises in determining a suitable reference figure for transportation performance, volume and costs. If they limit themselves to natural figures, to some extent the result is an inadequate reference to production planning. On the other hand, natural figures can represent different financial values and differentiated transportation requirements. But what is required is comparability within a single combine or branch of industry. The solutions implemented are, as a result, often inadequate.

--Changes in plans, overfulfilment or underfulfilment of production and sales plans, changes in balance shares, changing the suppliers and buyers, etc., affect transport planning if they mean additional need for transportation or the return of unused capacity in the current plan year.

The plan has "legal force" for the combine, and any change starts a chain reaction, particularly as the individual partial plans are, or are supposed to be, balanced with each other.

--Cooperation in operations with the carriers, particularly with the railroad, places increasing demands on the quality of transportation planning. On the basis of transport contracts between customers and enterprises within the framework of assigned plan numbers, the dispatchers, for example, are obliged to report their requirements monthly. Confirmation comes in the form of the transport plan decision, at the latest 3 days before the beginning of the plan month. The enterprises have to place an order for freight cars at the latest 2 days before the day they are needed, as part of the binding plan decision. The assumption is that there will be consistent full capacity over 7 days, which means that Saturdays and Sundays have to be included. Operational transport planning for each month, including plan supervision and monthly accounting of transport indicators, have to be reconciled with the planning of production and its realization.

2. Optimization of Transport

A noticeable reduction in transportation needs on the part of industrial shippers is to be achieved by applying transport optimization. It includes:

- optimization of locations, principally for installations which send or receive bulk cargoes
- optimization of delivery arrangements on the basis of existing locations
- optimal distribution of transport assignments under existing supply arrangements and the branches of transportation suited to them (determination of optimal division of labor within the transport system) and
- determination of optimal operating procedures and technologies within and between the individual branches of transportation. (Footnote 86) (Klaus Juergen Richter: "Methoden der Transportoptimierung," East Berlin, 1984 p 10)

Optimization, employed as early as the 1960's in improving the efficiency of bulk freight shipments in the transportation system, was only "rediscovered" in connection with the task of traffic intensification. The absence of compelling economic reasons for its use, but also the lack of " . . . the type of computing facilities and information base which are adequate for the magnitude of the tasks to be accomplished, in all transport-intensive branches of the economy . . . " resulted in the neglect of transport optimization. "The computing technology base has since been developed by using equipment from the ESER system. It can be expected that the informational requirements for optimizing supply arrangements will now improve." (Footnote 87) (Ibid., p 9)

Attention is currently focused on optimizing supply arrangements (i.e. shipments between factories), because transportation costs can be reduced over the relatively short term and without additional investment capital. The following estimate reveals the expectations attached to it: "Optimization calculations showed that transport costs can be reduced by 3 to 5 percent if this method is applied consistently." (Footnote 88) (Ibid., p 8)

In the opinion of the transportation minister of the GDR, the results achieved so far in reducing transport costs have resulted primarily from these measures. He commented: "These significant results can be attributed primarily to optimization of deliveries and shipments. As a result, in the years from 1981 to 1984, a total of 8.4 billion ton/km in freight transportation was not needed." (Footnote 89) (Exclusive interview with Minister Otto Arndt: "Tasks for the Transportation System in the 1985 Plan Year," in: DDR-VERKEHR, No 1, 1985, p 2)

First practiced in the five most transport-intensive branches of the economy, coal and energy, ore mining, metallurgy and potash, construction, the chemical industry and agriculture, forestry and foodstuffs--which account for three-quarters of the shipping volume and performance of the branches of public transportation--efforts will be made increasingly to optimize supply arrangements in firms in other areas of the economy. The metal-processing industry can be taken as an example. Particularly in the 1960's and 1970's, its product and production structure was associated with a disproportionate development of the scope and of the value of cooperation performance and consequently of transportation relations.

The scope and structure of transport processes can be seen from the example of the October 7th Combine in Berlin. This combine consists of 13 enterprises, with over 40 plant sections and manufacturing areas, which belong to the Bezirks of Berlin, Leipzig, Karl-Marx-Stadt, Dresden, Gera, Magdeburg, Potsdam and Halle. Annually they produce about 3,000 machine tools, made up of approximately 130,000 to 160,000 individual parts, with a weight of up to 20 tons per part. About one-half of all the individual parts are manufactured in plants outside the combine. To the already extensive transport performance between the plants in the combine, there is consequently added, to an even greater extent, that which results from its supplier relationships to plants outside the combine. (Footnote 90) (See Guenther Tessmann and Heinz Zerressen: "Tasks in the Complex Rationalization of Production and Transport in Industry," in: DDR-VERKEHR, No 1, 1984, p 8)

As a result of the "reevaluation" of these supply and purchase relationships from the perspective of transportation economy, and with the aid of optimization of transport, it was possible to reduce specific transport costs in this combine to 65 percent from 1980 to the beginning of 1985. As studies showed, the scope of cooperative relations could be reduced by about 10 percent, and thereby improved for transport, through improved organization of production without additional investment. (Footnote 91) (See Otto Arndt: "The Transportation Policy of the GDR," p 292)

However, connected either directly or indirectly with transport optimization, the following problems result for firms that have to ship:

--Transport optimization is not relevant for all firms, particularly not for those with a specialized production program. As a result of the high degree of specialization in industry, there are often only one or a just a few possibilities for the purchase of particular products. In the case of long transportation distances, and with shipments being shifted to the railroad, conditions arise which make the continuous shaping of the production process difficult.

--From the transport-economic perspective, the question generally arises about the need for the existence of highly productive specialized companies, which appear as monopoly suppliers within the GDR's economy. Although such a monopoly position cannot be avoided in exceptional cases, if existing transportation routes are taken into consideration, the tendency must be:

- a. either an orientation toward a large number of smaller, more specialized, scattered production sites, or
- b. the companies must expand their production program and thereby surrender some of their specialization. This means that the solving the tasks of transport optimization can, under certain circumstances, result in a change in the plants' production program.

--Many supply relations are so stable and well-established that to reduce their number with the goal of saving transport costs cannot be efficient, either for individual industries or for the entire economy. The enterprises in question would have had to accept increased expenditures in another form as the result of optimization. In the case of well-proven cooperative relations, which grew

over a long period, specific product knowledge and experience, as well as mutual dependency in technology have often developed as the result of the need for close cooperation between the semimanufacturers and the end manufacturers. To destroy all this means to devalue knowhow in the broadest sense of the word and occasion temporary drops in efficiency. Many apparent successes in optimization, viewed over the long term, will have to prove their worth in this respect.

--Even if it has been possible so far to implement optimization measures for the most part without additional investment costs, there have sometimes been high outlays in the plants for production organization and technology. They have to adjust in differing degrees to the new supply relationship. An increase in the percentage of what they produce themselves, changes in the organization of production, as well as rationalization of the main and auxiliary production processes are the price paid for transport optimization, the shift in transportation and, as a result of this, conservation of diesel fuel.

--Many difficulties arose for companies that ship in the past as a result of the suppliers not honoring their obligations, as determined by law. That means deliveries were often not made on schedule and were not of the needed quality. (Footnote 92) (See Authors' collective: "Komplexe Produktions-Transportrationalisierungs-Erfahrungen aus dem VEB Werkzeugmaschinenkombinat '7. Oktober' Berlin" [Complex Experience in the Rationalization of Production and Transportation from the VEB October 7th Machine Tool Combine, Berlin], from the series: "Der Parteiarbeiter" [Party Worker], East Berlin, 1984, p 47) In an economy that divides labor, defects of this kind result in a chain reaction. In order to compensate for these interruptions, the plants were often forced to make use of their own vehicle pool. From the perspective of limiting works transport and of the associated shifting of shipments to the railroad, the stability of supply relations, i.e., primarily the adherence to contractually established performance parameters, is a basic prerequisite for the continuity of the factory production process. This applies even more when, as was mentioned above, transport by rail cannot offer a trouble-free alternative to work transport from a quality aspect. In addition, operating and bureaucratic costs (ordering deadlines, requisition requests, etc.) increase for the dispatching company when public transport is used.

--The increasing dependence of users in the economy on the carriers, resulting from the optimization measures, requires the buildup of capable and powerful information systems. Existing information systems are no longer adequate to meet requirements. Particularly for the planning and implementation of coordination in transport, new solutions are needed for transmitting and processing information, and these will have to be provided by the carriers and the users.

--As a consequence of optimization of supply relationships, there will be a growing tendency in the enterprises and combines to increase their materials inventory, particularly their contingency warehouse inventory so that they will be able to compensate for possible breakdowns in material deliveries. The resulting stockpile of working capital will increase the production fund levy (a kind of capital tax). It will probably be less of a burden on the enterprises than the sanctions that result from nonfulfilment of planned pro-

duction volume caused by a shortage of materials. If there is any doubt, the unscheduled increase in inventory has fewer negative effects for the enterprise than being in arrears with plan fulfillment.

--In the opinion of experts in the GDR, optimization of delivery relations has "largely exhausted the possibilities of the first move to utilize available reserves." (Footnote 93) (See Authors' collective: Complex Experiences in Rationalization, p 41)

The considerable success achieved in the first few years of transport intensification gives rise to the conclusion that only negligible conservation effects can be expected from a "secondary optimization." New paths to reduce transport needs should be followed in future, designing products to be suitable for transportation and reducing the amount of material used in them, but also by possibly changing the structure of production and consumption. When the products are designed, the requirements must be met for full use of the space and weight capacity of the different means of transportation (if necessary, by breaking them down into units suitable for transportation). The factories are faced with the task of examining all products that have been in production for more than 2 years and determining their suitability for transportation. By doing this, the factories are simultaneously implementing another intensification measure, material conservation. (Footnote 94) (See Authors' collective, op. cit., p 50)

--In conjunction with transport optimization, the enterprises and combines are finding themselves increasingly faced with the task of rationalizing their auxiliary production processes, in particular the internal factory processes involving transport, transfer and warehousing (TUL processes). In permanent neglect before, because immediate production was at the focus of research and development and when investment capital was being distributed, these auxiliary processes represent a severe bottleneck. The disproportions within the production processes are not proving to be a hindrance to realizing existing and expanded production plans only since the new transportation strategy took effect. Since transport problems have become a priority for the entire economy, special importance attaches to the TUL processes. As analyses have shown, they are about 40-percent mechanized and employ a force of about 1.5 million workers, with a relatively high risk of accidents and under difficult working conditions. GDR experts put the cost of factory-internal handling at between M 31 and 33 billion annually. (Footnote 95) (See Gerhard Grossmann and Guenther Heinrich: "Handling Costs and Ways to Reduce Them," in: DDR-VERKEHR, No 9, 1984, p 263) Additional, and even present, tasks in transport strategy can only be carried out successfully if the level of these processes is raised significantly. Bringing the technical-technological level of the principle and auxiliary production processes up to standard by raising the degree of mechanization in TUL processes and introducing robot technology are indispensable requirements for making the solutions that are brought about as part of transport optimization permanent and efficient.

--Guaranteeing high-quality transportation is an objective which deserves special attention in the context of transport optimization. Caused by the shift of traffic from road to rail, which in turn was undertaken as part of the

optimization of supply relations, broken shipments are developing into a key problem for the transportation system, but for the railroad in particular. Multiple transference of goods, as the result of a break in the transport process, strongly influences transport quality. The extent to which goods are handled can be seen from the fact that goods have until now been transferred at least twice in shipment outside the factory. The trend will be for the number of handling operations to increase. The transportation systems handles 20 percent of the total transfers, and the shipping industry 80 percent. (Footnote 96) (Gerhard Grossmann and Guenther Heinrich, loc. cit.)

Inside the plant goods are transferred even more frequently, internal factory transportation is interrupted as many as seven times. In the case of bulk goods and fluids--which make up about 90 percent of the goods transferred--it is 3 to 10 times, for example. Mixed freight, which makes up 10 percent, can be transferred between 6 and 20 times, in machine construction it can be as many as 50 times. These examples illustrate the kinds of stresses that goods are exposed to even during the production process inside the plant and the importance that must be attached to transfer processes.

Comparable to the situation of the factories in the shipping industry, the problem in the transportation system is that the transfer processes, which make it possible to change carriers, also take place at too low a level. But it is the level of their equipment and technology that determines the extent of freight damage.

In contrast to the positive balance in transport performance shown by the economy at large and to the respectable successes achieved in shifting goods shipments, transport damage increased from 1981 to 1983 by about one-quarter, nothing being known about the extent of damage up to the beginning of the 1980's. (Footnote 97) (See Gerhard Christ: "Measures to Ensure Quality in Freight Transport," in: DDR-VERKEHR No 19, 1984, p 258) For railroad transport the following groups have been determined according to the cause of damage:

1. "Ignorance on the part of the consigner of the mechanical stresses involved during railroad transportation and underestimating its effects on the goods consigned.
2. The use of load units and packing designed for direct road transportation, but which offer no protection in the case of broken shipment in freight cars and multiple transshipments.
3. Defects in the design and/or quality of the products.
4. Belated or insufficient preparation on the part of the consigner to use new transport technology results in inadequate material-technical prerequisites to protect the goods during shipment.
5. Failure to comply with the complexity of TUL processes results in lopsided savings in packing or safety material or in its incorrect or inadequate use.
6. Violations of control technology (on the part of the TUL plants) results in poor quality execution of shipments." (Footnote 98) (H.J. Braune: "Examples of Rational Loading Technologies for Selected Types of Freight," in: DDR-VERKEHR, No 4, 1984, p 111)

A great part of the damage is caused by the effects of railroad transportation, i.e. by improper shunting (Footnote 99) (Unusual shock loads are created during shunting, when shock load and longitudinal stress presents a special risk for larger products and load units), defective equipment and shunting facilities, as well as by dampness, theft and accidents. The nature of the freight, i.e. its liability to breakage under normal stress during shipment, is likewise a reason for an increase in the incidence of damage. (Footnote 100) (See Economy of Transportation, Part II, East Berlin, 1979, p 209; see Gerhard Christ, op. cit., p 76)

According to estimates by experts, 35 percent of the damage that resulted from being shipped could have been avoided with proper packing. The changes in shipping stress on the goods resulting from increased handling, longer shipment times and additional shunting would have to be compensated for by suitable packing and loading technology.

Inadequate preparation on the part of the carriers and the shippers for the requirements of transport intensification, as well as the previously mentioned inadequate level of handling processes, are further reasons for these phenomena. None of those involved in freight transportation were at all prepared for the changed conditions and stiffer requirements. This is the ultimate cause of the damage and the losses.

In the final instance, the effort to conserve material in general and packing material in particular, and at the same time to implement a major shift in transportation, cannot succeed in either individual industries or the economy at large. The exception is if fuel conservation alone is considered to be an objective and losses are discounted. It appears to have been a fantasy on the part of those responsible in the GDR's economy that goods poorly packed, with additional handling during shipment, and sent by rail would reach the addressee undamaged and on schedule, because reality has quite different results to show.

Now solutions to the packing problem are being demanded that require the minimum use of material, including reusable material, but also product development that considers transportation and conserves material.

Until the packing problem is finally solved, for example, by using box pallets or small containers, crates for bottles with a high insert, and boxes or trays made of corrugated cardboard with dividers, a further shift of goods to the railroad will only take place when losses are accepted that affect individual industries as well as the economy generally. Apart from expenditures that result from the elimination of shipping damage, the change in transportation will entail a substantial added expense for handling services, packing and product changes. Then there remains the question of the price which has to be paid to achieve these transportation policy goals.

Binding rules for the optimization of transport relations are set out in planning, organization and cooperation law. Competencies, participation and coordination measures are established, and they manifest themselves in the drafting of contracts.

The following legal regulations are determinative in the regulation of transport optimization, bearing in mind that the shippers bear the principal responsibility for observing them:

--the law of 25 March 1982, concerning the contract system in a socialist economy--Contract Law--Legal Gazette I/1982, No 14

--the decree of 10 December 1981 on public goods shipment by rail, inland shipping and vehicle--Freight Transport Regulations (GTVO)--in the form of the Second Decree of 28 June 1984, Legal Gazette I/1982, No 2 and No 12/1982

--the directive of 31 December 1981 on determining transport needs and transport balancing--Transport Balance Directive (TBAO)--Legal Gazette I/1982, No 7 and

--the directive of 1 April 1984 on the use of transport norms to improve planning, accounting and control of the economy's transport expenditures--Transport Norm Directive (TNAO)--Legal Gazette I/1984, No 10.

In the GTVO the "broad optimization of supply and delivery relations" is set out as a principle for freight transport in paragraph 1 (4) as a possible way of reducing transport costs.

Assignments, rights and obligation for state organs, combines and plants, as well as transportation boards are laid down with respect to optimization in the GTVO in paragraphs 2 through 5. Paragraph 5 states: "It is a principle that supply and shipment relations must be optimized."

The decree on combines similarly obligates the plants to set up rational cooperative relations with other combines and plants. (Footnote 101) (See decree of 8 November 1979 on VEBs--Trust Enterprises and VEBs--Legal Gazette I, No 38 p 355). By forecasting state transport indicators for drawing up plans, the companies are encouraged to realize this objective. The focus is on developing the plant transport plan. For the sake of completeness, reference should also be made to the Tasking Workbook [Pflichtenheft] for research and development assignment, what is known as the Tasking Workbook Decree [Pflichtenheft-Verordnung]. (Footnote 102) (See Legal Gazette I/1982, No 1, pp 1-12) It lays down that in the development of new products an optimal weight-performance ratio, as well suitability for transportation and handling, have to be considered in the desired performance parameters.

The Contract Law establishes in paragraph 54 the factories' obligation to make their shipments by the economically most suitable method transport and to enter into the appropriate agreements in the service contract. It is important to determine the site of the service (the customer's location) to prevent the shipper making pickups with the customer's transportation.

3. Works Transport

The general relationship between the railroad and motor traffic has already been discussed. What follows is an examination of a few selected problems in

works transport with which the transportation industry sees itself confronted within the framework of the transport intensification measures.

Under present conditions the restriction of works transport and (or) its better utilization is seen as a principal source of fuel conservation. Works transport was continuously expanded until the beginning of this decade, because the constantly increasing division of labor in the economy and the change in freight structure demanded adequate availability on the part of the plants and the guarantee of matching transport quality, now--under changed energy-economic conditions--a new way of looking at things prevails. Possibilities for reducing the plants' freight transport services are seen in the replacement of these services with both public vehicle traffic and the railroad and inland shipping. At the moment, quantitative savings are of paramount importance, while the qualitative aspects in the broadest sense are not being considered. The decisions being made are born of the need for demonstrable short-term results. The focus is on conservation, the problems stemming from it have to be solved in the short term, or they will continue to exist. The priority target for the intensification measures in works transport is those plants with between one and three vehicles. That includes about 75 percent of the plants with works transport. In contrast to plants that have a motor pool of 100 vehicles or more, factory-operated traffic with fewer vehicles is considered inefficient. This evaluation is based solely on overall economic considerations. According to this evaluation, the overall economic efficiency of the works fleet diminishes from an energy-economic standpoint " . . . the smaller the number of shipments directly connected with the production or consumption process and the greater the possibility of using public motor vehicles, the railroad or inland shipping as a replacement." (Footnote 103) (Werner Gross et al.: "Reproduction and Transport," in DDR-VERKEHR No 2, 1982, p 46)

As a result of this one-sided view, the factories' power of disposition over their vehicles was sharply curtailed, all opportunities of transferring shipments to the most energy-efficient carriers were mandated by the administration and the "socialization" of the means of transportation was pushed through on a broad scale. In practice it means the creation of factory transport groups, which are oriented toward specific industries or made up by area. As in the case of the joint use of handling equipment, vehicles that belong to one factory are used by several factories. Just as reducing the vehicle fleet and having the railroad make delivery and sales shipments is not efficient in every case for individual industries, this state-decreed form of "socialization" works against the interests of the factories in the same way. Apart from the increased administrative costs and a constant need to coordinate, the plants' ability to manage their capital assets is severely limited, because they have to make some part of their transport capacity available to other enterprises. This drawback is not made up for by the profits that the plant providing the transport capacity makes in the form of "leasing fees." They are not interested in income of this kind, because it does not compensate for the second drawback, which is above-average wear on the available transportation. Since the plants can only acquire new vehicles if there is a "state" allocation, even if adequate funds are available to replace worn-out ones, they are intent on not shortening the working life of their fleet by greater material wear and tear. Particularly as they remain responsible for repairs when the vehicles are in joint use, in spite of the long-standing problem with obtaining spare parts.

Overall, this form of transport intensification may possibly appear to be energy-economic from the perspective of the entire economy, but against it there are the substantial interests of those immediately affected in individual industries.

The factories are being pushed to implement current transportation policy objectives through a number of state regulations.

In addition to the Freight Transportation Regulations, which contain the dividing lines between the individual carriers and between motor traffic and factory transport, the coordination decree regulates the exact division of assignments between public transportation and works transport, as well as the coordination assignments for shippers. (Footnote 104) (Coordination Decree, loc. cit., pp 141-149) The following are to be assigned to factory transport:

1. Production-linked shipments of equipment by road--particularly shipments between plants as part of plant assignments, for which there are no delivery contracts on plant property, between parts of the plant, within plant production areas, and so on.
 - broken load shipments in pre- or post-production processes to or from the railroad or inland shipping, at plants with transshipping functions
 - shipments for service and repair operations, for service, maintenance and repair of production and transportation facilities and their installations
 - trips for the collection or distribution of preassigned or subsequently assigned structural units in the supply area
2. Sales and supply shipments which cannot be coordinated because of area-specific haulage conditions. (Footnote 105) (Ibid., paragraph 6, p 143)

What is new in these regulations is that all road freight haulage that is performed as part of works transport and public motor transport is subject to coordination and approval. (Footnote 106) (Ibid., paragraph 7, p 144) In practice this means that almost no unloaded vehicle can move on the roads of the GDR, because all the possibilities for finding a full load for the truck must be exhausted. This also applies to public motor transportation, because its shipments also have to be reported and coordinated. At this point reference should be made once more to the 30-km distance limit that applies to local traffic from one Bezirk to another, and to special regionally established distances. This regulation suspends any possibility of the factories managing their own vehicles. Even in the event of catastrophes, breakdowns and production stoppages, a shipment must receive approval. The sanctions for violations remain within reasonable bounds. This is when the contract law applies, although reprimands and fines threaten those responsible for using vehicles, as regulatory punishment.

The assessment of a long-distance transportation surcharge and of a factory transport levy for making shipments by road which are carried out by enterprises with their own fleet, as well as a production fund levy if the equipment norm for motor vehicles is exceeded (norms which are presented to the enterprises annually as binding normatives and limits), are additional methods for reducing the economy's transportation costs. (Footnote 107)

Directive on Additional Economic Measures to Reduce the Economy's Transportation Costs of 14 November 1983, Legal Gazette, I/1983, No 34, p 336) This directive states that, in the case of a shipment by road beyond a radius of 50 km from the loading site, the already existing long-distance surcharge is doubled. The factory transport levy is a special sanction for plants that make long-distance freight shipments with their own fleet. This levy increases manufacturing costs, because it has to be reported as a fine and compensation. It is deducted in the form of a product-associated levy to the state budget. If the equipment normatives for vehicles are exceeded, the factories in the shipping industry have to remit, for example, in addition to the customary production fund levy, an additional and non-plannable levy of M 5,000 per ton of payload monthly to the state budget (see paragraph 6).

Another directive aims in the same direction: reducing the motor vehicle inventory by scrapping antiquated vehicles. According to this directive, ". . . vehicles whose fuel consumption can be shown at the monthly accounting to be in excess of 5 percent above the established factory norm . . ." are immediately subject to inspection. (Footnote 108) (Directive on Material Recognition of Workers for Conserving Fuel with Motor Vehicles in Road Haulage of 20 January 1983, Legal Gazette, I/1983, No 4, p 39) In practice this means scrapping those vehicles. The factories have to establish operating norms for fuel consumption for each vehicle. In addition to the consequences already mentioned, improving on these norms is linked with a material recognition of the driver. Since the prizes for saving fuel are extremely varied, interest among the drivers in saving fuel is probably limited.

IV. General Estimate

In 1981, high foreign trade deficits and growing economic expenditures to meet energy requirements caused the political leadership in the GDR to revoke the transportation policy concept that had been in force until then and to promulgate a complex program of transport intensification as part of the general intensification of the national economy.

What was understood by intensification of domestic freight transportation was not only better utilization of available production factors; it included a reduction of the economy's transportation costs, conserving substantial amounts of diesel fuel, restricting works-owned truck traffic (factory transport), gradually replacing diesel traction in railroad transportation and reducing long-distance truck haulage in favor of the railroad and/or inland shipping.

The intensification program affected all carriers and the entire industry that makes shipments. The complexity of the assignment and the harshness of the deadlines stood in crass contrast to existing conditions.

They were typified by deficits in investment in all areas, the dominance of motor transportation, defects in the transportation system network, electrification being behind schedule, defective technical and technological equipment, an inadequate information system on the part of the carriers, as well as a low level of equipment in transportation, handling and warehousing processes, inadequate packing, economically inefficient supply and delivery transport relations and much more.

How little long-term preparation was undertaken for the new transportation strategy emerges from the fact that the need for it was not announced until after the process of creating combines in industry was already completed, and thus the future supply and delivery relations for the factories were already established.

Under these conditions--increased material shortages on the one hand and a complete lack of any prerequisites on the other--the objectives of the intensification program could not be achieved by economic means (shortage prices) alone, so the GDR political leadership applied administrative measures more strongly. Attempts are being and were made, by the allocation of quotas and elimination, to push through the newly defined transportation policy. Administrative intervention has already reached a point where it largely restricts the interests of those in the shipping industry and its ability to react.

On the other hand, it should not go unmentioned that the efforts to intensify all processes in the national economy (for example, reducing the material intensity of products) can also have positive effects on the intensification measures in transportation. But transportation--although it is the beneficiary--would not have to take responsibility for these effects.

If one evaluates the results so far from a quantitative point of view, the general commission given at the 10th SED Party Congress to reduce specific transportation costs has been carried out. (Footnote 109) (See Otto Arndt: "The Transportation Policy of the GDR," p 290) In 1984 specific transportation costs, which express the ratio between freight transportation performance and national income produced, were about 22 percent below the costs for 1980. (Footnote 110) (Statistical Yearbook of the GDR 1985, p 85) To this extent success can be attributed to the rigorous conservation policy aimed at reducing the scope of services in the transportation system. In comparison to the initial year, 1980, 145 million fewer tons were transported until 1984, a drop of 13 percent, while production output of the manufacturing economy climbed. The freight transportation performance saved came to 6,409 million ton/km, about 8 percent of the transportation performance of 1980. (Footnote 111) (See Tables 2 and 3)

However, it would be premature to claim to see progress in intensification in this development. Analysis of the individual carriers shows that the 145 million tons saved are almost identical with the figure by which factory transport was reduced. On the other hand, against the drop in the volume of shipments of 13 percent is the rise in capital assets of about 17 percent in Transportation, Post and Telecommunications and an increase in the number of employees. This comes out to an overall decline in productivity with expanded factors of production, which contradicts the claim of intensification.

The processes that have taken place in domestic transportation do not yet fulfill the criteria of intensive business practice. One part of the results that can be evaluated as positive, for example, the reduction of inflated transport needs on the part of the economy that ships, comes from the elimination of "home-made" system defects by means of altering the indicators for evaluating performance (net production) and reducing the supply of transportation.

Other things, such as the savings in liquid energy sources, either cannot be judged in their long-range effects or the results are being bought at the cost of disproportions and increased expenditures in other areas. There is a strong suspicion that the end result at the national level of conserving liquid energy sources--measured at national prices--does not cover the associated cost increases for individual industries under any circumstances. But counter-calculations of this type are ignored in an economy which counts its expenses within the country in domestic currency, but can only pay for imports with return supplies.

It cannot be overlooked that the growth in high-price goods that was aimed for --an intensification target of the processing industry--will not only be limited to the transportation system in the sense of more efficient transportation performance, but will impose growing demands of a high technical level on the production of the means of transportation and on an adequate handling technology. Without investment capital for the transportation system and for the shipping industry, the additional transport intensification measures needed are unrealizable.

In this evaluation of the intensification measures the consequences for the environment have been completely left out of consideration until now. There is no argument but that the advancement of electric traction in railroad freight haulage--in comparison to diesel traction--has reduced pollution on the immediate environment by the side of the tracks. But the result of this intensification is certainly out of proportion to the environmental damage caused by the open-cast mining of brown coal and its being burned in thermal generating stations. Also left out of consideration in this survey is the transport required for the coal and the ash, which accumulates in no small amounts when generating electricity.

The overall assessment is that domestic freight transportation in the GDR has not yet produced the proof of intensive business practices. The only success achieved so far has been to load antiquated materiel to its limit and to tap into reserves intrinsic in the system. Additional permanent and lasting results in intensification can no longer be brought about without a substantial improvement in the quality of capital assets and without the expansion and modernization of buildings and plant.

9581

CSO: 2300/103

DOMESTIC ANIMAL CENSUS

AU031430 Bucharest SCINTEIA in Romanian 1 Feb 85 p 1

[Editorial: "Today the Domestic Animal Census Begins"]

[Text] As of today, 1 February, the domestic animal census begins in all localities. This is an action with great economic significance and is being carried out in order to acquire exact knowledge of the number of animals, according to species and age, possessed by agricultural units and private farms. All animal owners are called upon to assist the unfolding of this action, under the most favorable conditions. As is well known, the census gives the possibility to obtain detailed and complete information regarding the number of animals, poultry, and bee families existing at the date when the registration begins, that is, 1 February, at 0800. On this basis, the most appropriate measures will be taken regarding increasing the number of animals, ensuring fodder, and working out the entire set of technological and organizational measures designed to make a contribution to the more accelerated progress of the livestock sector. Among these measures, the ones referring to giving material support to the stock breeders so that they can fulfill their tasks of delivering the contracted animals to the state fund are very important.

In order to carry out the registration work under the most favorable conditions, thorough preparations have been made and an intensive activity of popularization has been carried out in order to acquaint all owners with their duties to declare correctly the number of animals they possess, thus easing the work of the census worker. As is well known, all those who do not declare the exact number of animals they possess are punished according to legal provisions.

The party bodies and organizations, the people's councils, and the specialized bodies have the duty and great responsibility to guide and closely assist the census commissions, so that they can carry out an entirely fruitful activity and can constantly be aware of the stage of the animal census.

[The following appeal is printed in a box at the end of the item.]

Agricultural Workers and Animal Owners!

Closely assist the activity of the teams which carry out the animal census by correctly declaring the number of livestock you possess; thus, you make your contribution to working out the measures that must be taken in order to develop the livestock sector and to fulfill the provisions included in the contract for delivery to the state fund and to the self-sufficiency fund!

/6662

CSO: 2020/86

BRIEFS

GEOLOGICAL RESEARCH FOR COAL--Bucharest AGERPRES 28/1/1986--In the last few years, geological research has intensified in Romania and new coal and oil shale resources have been tapped. Furthermore, studies have been conducted in the expansion of open-cast mining and the application of efficient and profitable technological and scientific solutions to extract coal from thin layers, pillars and less accessible despoits. The geological map of areas in the southern, central and eastern Carpathians, in the sub-Carpathians in Oltenia and Muntenia, in the western part of the Transylvanian depression, etc., has been sensibly changed. The productive collaboration between geologists and miners allowed for an effective passage to the exploitation of new deposits as early as the stage of geological tapplings. New extraction units went on line at Timiseni-Pinoasa, Tismana, Poiana Cocoreni, etc., and new mining units were commissioned at Lupeni, Cimpa and in other areas of the Jiu Valley. With the exploitation of new coal and oil shale deposits new technologies have been expanded and units have been equipped with high-performance outfit. In the current five-year period, spanning 1986-1990, lignite and brown coal production will grow at a high rate to hit an annual 84-89-million-ton mark. [Text] [Bucharest AGERPRES in English 1212 GMT 28 Jan 86 AU] /6662

MERCHANT FLEET DEVELOPMENT--Romania's sea-going merchant fleet was recently equipped with three ships of various capacities and utilizations: the multi-purpose cargo carrier "Posada" (15,000 dwt), general goods carrier "Nicoresti" (8,750 dwt), and the ore carrier "Baraolt" (65,000 dwt) built in the shipyards in Galati and Constanta. The first Romanian oil tanker (35,000 dwt) was launched from the Galati dockyards and other two ore carriers of 65,000 dwt are ready to go at sea from Constanta. The current capacity of Romania's merchant fleet--of more than 3.7 million dwt (Romania ranks tenth in the world from this point of view) is to be developed more in the ongoing five-year plan 1986-1990. In keeping with a special programme concerning the development and modernization of ship construction, the transport capacity of the Romanian sea-going merchant fleet will double over this interval. It will be mostly equipped with high complexity ships for specialized transport. [Text] [Bucharest AGERPRES in English 0910 GMT 6 Feb 86 AU] /6662

CSO: 2020/86

WARSAW PACT SMALL-CALIBER NAVAL ARTILLERY DESCRIBED

East Berlin VOLKSARMEE in German No 49, 1985 (signed to press 2 Dec 85) p 8

[Article by Commander H. Mehl: "Fully Automatic Naval Artillery"]

[Text] Surface vessels of the allied socialist fleets are equipped with fully automatic artillery of varying calibers to combat enemy air attack means and sea targets, as well as to provide fire support for sea landings. The artillery systems, which are almost without exception designed as on-deck assault guns, comprise an important component of the combat strength of the most varied types of vessels, in addition to available rockets.

Radar and Remote Control

It was possible to increase the firepower of naval artillery significantly because specialists had developed medium-caliber guns into fully automatic weapons and created multiple-barrel small-caliber guns. Furthermore, today all gun systems are equipped with radar fire control systems which have also significantly improved their accuracy, while taking various external ballistic factors into account. With respect to small-caliber guns with high rates of fire, however, visual aiming and firing processes have retained great significance, particularly since the fully automatic weapons are remotely controllable via so-called sighting columns equipped with extremely rapid electrohydraulic gun-laying drives. Frequently, several guns on one side of the ship or of the forward or aft regions are aimed and fired in a synchronized manner, thus achieving a high fire density. The necessity for the effective employment of small-caliber guns for close-in defense was adequately underscored by the events in the Falkland conflict of 1982. Thus, the British missile destroyer HMS Sheffield was hit by an air-to-ship AM-39 Exocet missile on 4 May 1982; during its approach, it was possible to make out and visually observe this missile for about 5 seconds. The HMS Sheffield, which was at the time the most modern missile destroyer in the British fleet, however, did not have any suitable artillery for close-in defense. After being hit, the vessel burned out completely and sank while under tow on 10 May 1982.

Cooling for Larger-Caliber Guns

Medium-caliber guns, from 76-mm through 130-mm, can today also fire bursts and, seen on an international scale, rates of fire from 40 to 70 rounds per

minute are attained. Firing in bursts involving the above-named caliber weapons results in a high thermal stressing of the barrels. In order to keep this stress within tolerable limits, the fully automatic guns were equipped with the most varied cooling systems. Special fluids or cooling gases are used. As reserve cooling, ordinary seawater can be used in some cases provided by firefighting equipment. Retrocooling (heat evacuation) with respect to some gun models is accomplished via a permanent cooling mantle which, because of the barrel recoil, was equipped with a hose connection. With respect to most guns, the throughput or circulation cooling system is also fully automated.

Since very high rates of fire of small-caliber guns, amounting to between 2,000 and 3,000 rounds per minute, result in great thermal and mechanical stress with respect to the barrels, multiple-barrel so-called revolver cannon were developed. In these weapons, the bundle of barrels rotates during firing about its longitudinal axis. The barrel bundle itself is also enclosed in a mantle tube and is cooled.

Ammunition Supply

Ammunition for small-caliber guns is predominantly supplied via ammunition belts which house various types of shells in a predetermined sequence. The firing of the shells is handled electrically and requires only a few milliamperes of power. With guns of medium caliber, specially designed feeder systems provide shells from drum or cassette magazines which are, for the most part, located in the gun barbettes. Today, gun and barbette form a design unit which is mounted as a unit on the substructure of the ship. Electrical, electrohydraulic, or pneumatic auxiliary power for aiming drives and ammunition feeds are provided by special auxiliary aggregates or the on-board power net. The maintenance and upkeep of fully automatic guns is a very interesting and responsible activity. It requires a high degree of specialized knowledge, combined with great practical skills on the part of gunners and armorers.

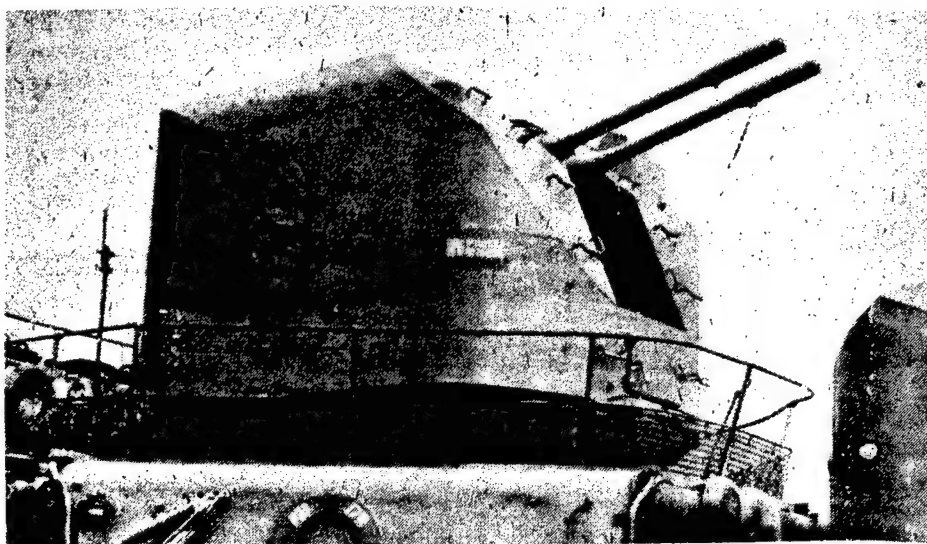


Fig. 1. 76-mm twin-turret gun on the Soviet missile cruiser Grosny.

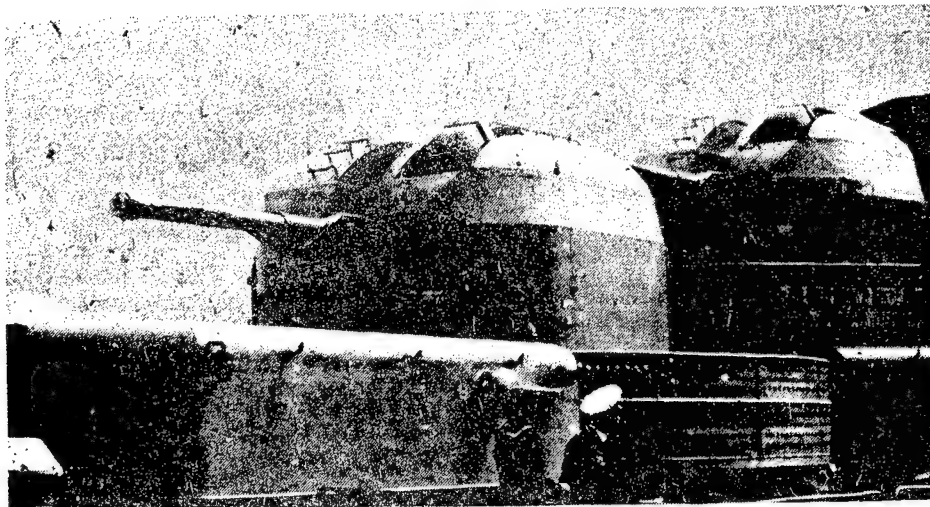


Fig. 2. Fully automatic 100-mm gun on the Soviet ASW vessel Neukrotimy.

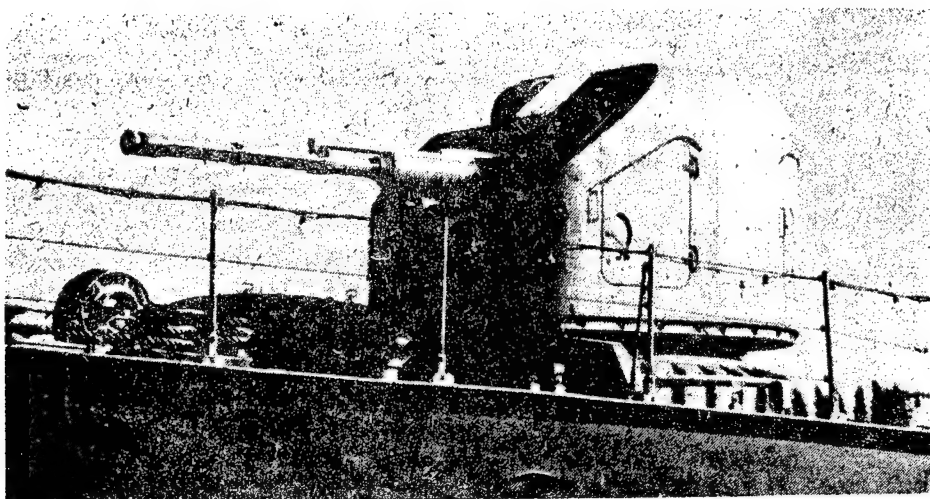


Fig. 2. Fully automatic 76-mm gun aboard the small Polish missile ship Hutnik.

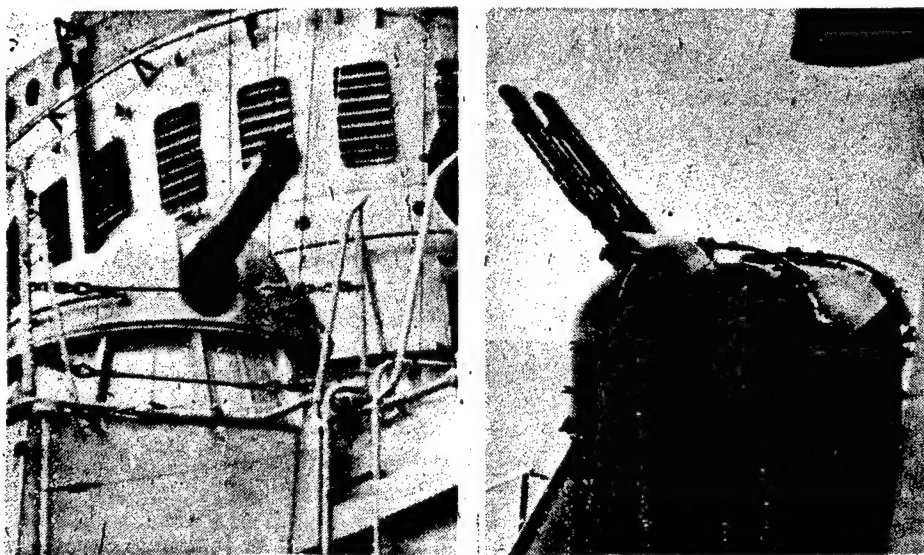


Fig. 4. a) Six-barrel 30-mm revolver cannon aboard the Soviet missile cruiser Grosny; b) 30-mm twin-turret gun aboard a landing craft of the East German Navy.

5911

CSO: 2300/161

REMOVAL OF TOXIC SUBSTANCES IN ARMED FORCES DETAILED

East Berlin MILITAERTECHNIK in German No 1, 1986 (signed to press 7 Nov 85)
pp 21-22

[Article by G. Simon, graduate chemist: "Harmless Removal of Poisons"]

[Text] When the law governing poisons came into effect on 7 April 1977, its area of jurisdiction covering the harmless elimination of poisons was expanded. This took cognizance in this area of the need to protect the health of workers.

The harmless removal of no longer useful toxic substances is captured in the Toxic Substance Law [1], Section 4, Paragraph 2, and Section 10, as well as in the Sixth Implementing Decree Pertaining to the State Cultural Law [2]. The Sixth Implementing Decree generally regulates the harmless elimination of no longer usable waste products and includes toxic substances.

According to the above-mentioned implementing decree, unusable waste products include solid, muddy, or liquid wastes, as well as residues, for which there are no scientific, technical, or economic prerequisites with respect to their usefulness in the national economy as secondary raw materials at the time of their occurrence.

No longer usable waste products are:

- a) toxic wastes,
- b) other harmful wastes,
- c) waste materials containing little or no harmful products.

In this contribution only the two first-named categories of waste products will be considered. Toxic waste products include those products containing toxins in Categories 1 or 2 in a concentration which makes them poisons in the spirit of the poison law. Other waste products containing harmful substances are waste products which are listed in the List of Harmful Substances [3] or poisons of Categories 1 or 2 in only slight concentrations so that they are not considered to be poisons in the spirit of the poison law. Examples of toxic waste products are listed in Table 1.

Table 1. Toxic Waste Products (Examples)

| <u>Waste Product</u> | <u>Incidence</u> |
|----------------------|--|
| Old acids | From batteries, used metal surface treatment acids, laboratory acids |
| Old alkalies | From printing plants |
| Cyanide | From metal surface treatment |
| Insecticides | From insecticide applications |
| Methanol waters | From laboratories and antifreeze |
| Tetrachlormethane | From degreasing operations |

1. Responsible for Harmless Elimination

The harmless elimination of toxic waste products must be demanded of those official locations which generate them. Responsible officials are the chiefs/ commanders, directors, as well as other persons of equal rank. As a rule, they will task the individual responsible for toxic substances with the safe removal of these substances.

Toxic waste products will only be eliminated under consideration of provisions of the Environmental Protection Law. The endangering of life or health of people, as well as the damaging of the animal or plant environment, must be absolutely excluded. National economic damage is also to be avoided, as is a deterioration of soil, water, or the air. The harmless elimination of toxic waste products is only permitted to be accomplished if the responsible state organizations have approved the application.

2. On the Application and Approval Procedure

The application for the harmless elimination of toxic waste products is to be submitted to the council of the bezirk (specifically to the specialist for secondary raw material economy) which has jurisdiction over the unit location. Applications are only processed if proof is provided that the waste product cannot be used as secondary raw material at the time of the application. Proof constitutes a position adopted by the organs superior to the applicant or by an opinion on the part of one of the expert opinion facilities listed in Table 2.

In order to be able to judge the possibility of rendering the waste products into useful materials, the applicant must provide all necessary documentation and analytical data and, where necessary, comply with security provisions protecting secrets. The specialist for secondary raw material economy at the bezirk council decides on the permit to be issued for the harmless removal of useless waste products and passes the applications on to the appropriate officer responsible for issuing permits. Toxic and other harmful waste products are the responsibility of specialist for environmental protection and water management at the council of the bezirk. This officer issues the permit and, at the same time, stipulates the type of elimination as well as the elimination facility to be used. Variations of harmless elimination of toxic waste products are shown in Figure 1.

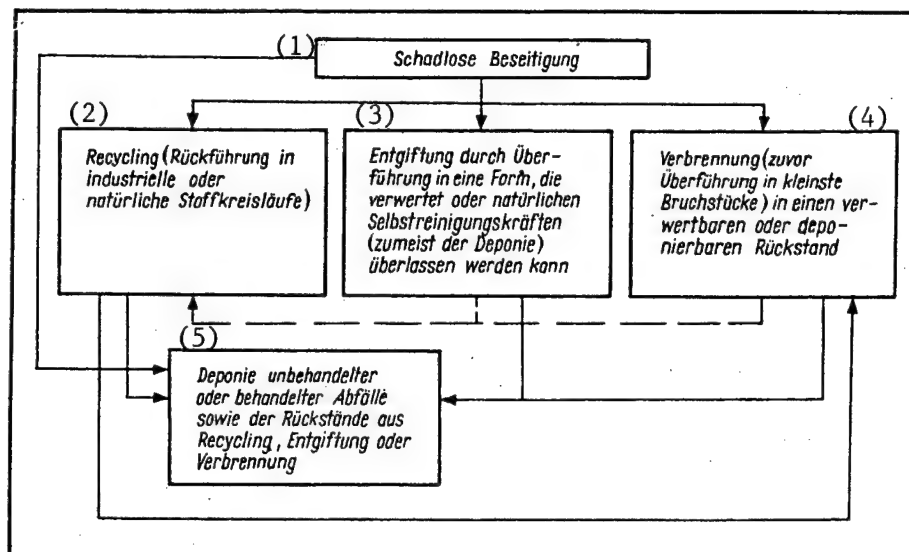


Fig. 1. Variations of harmless elimination of toxic waste products.

- Key:
1. Harmless elimination
 2. Recycling (returning to industrial or natural material circulation)
 3. Detoxification through transposition into a form which can be utilized or can be left to the natural forces of self-cleaning (mostly to the forces of deposit-settlement)
 4. Combustion (preceded by breaking up into the smallest fragments) to a reusable or depositable residue
 5. Deposits of untreated or treated waste products, as well as residues from recycling, detoxification, or combustion

Table 2. Facilities Authorized To Issue Opinions on Waste Products [4]

| <u>Type of Waste Product</u> | <u>Facility Issuing an Opinion</u> |
|---|--|
| Used solid salts | VEB Haertolwerke, Magdeburg |
| Mercury-containing wastes | VEB Chemical Works, Buna |
| Overlaid PUR components | VEB Synthesewerk, Schwarzheide |
| Mineral oil-containing residues | VEB Hydrierwerk, Zeltz |
| Used chemicals | VEB Laborchemie, Apolda |
| Residues from pharmaceutical production | VEB Pharmazeutisches Kombinat GERMED, home enterprise, Dresden |
| Arsenic-containing wastes | VEB Bergbau- und Huettenkombinat "Albert Funk," Freiberg |
| Toxic paint and solvent residues | VEB Druckfarben- und Lederfarbenfabrik, Halle |

With respect to the National People's Army and the Border Guard of the GDR, a transformation into nontoxic substances or less-toxic solutions is practically only applicable for organic solvents and acids and alkalies. Organic solvents can be eliminated by combustion while adhering to work and environmental protection provisions; acids and alkalies can be eliminated by neutralization. A

special problem is presented by the detoxification of small quantities of toxic by-products in laboratories. The method listed in the beginning of this article--in other words, the application for the harmless elimination of the substances submitted to the council of the bezirk, is hardly practicable for eliminating laboratory wastes. That is why Table 3 contains a few examples for detoxification of laboratory chemicals.

Table 3. Detoxification/Destruction of Laboratory Chemicals [6]

| <u>Chemical</u> | <u>Procedure for Detoxification/Destruction</u> |
|---------------------------|---|
| Active chlorine compounds | Treat with $\text{Na}_2\text{S}_2\text{O}_3$ solutions (0.3 kg $\text{Na}_2\text{S}_2\text{O}_3$ per 1 kg of chloride of lime) |
| Alkalies, ammonium water | Neutralize with 6 M HCl and dump into sewer |
| Chlorosulphonic acid | While stirring in ice water drops, neutralize with NaOH and flush into the sewer with ample water |
| Acids | Cover with calcinated soda/slaked lime (1:1), mix with water and thin down; in the case of HF, immobilize with lime at a pH of 12 to form CaF_2 (polyethylene bottle should be used as reactor vessel!); larger quantities of phosphoric acid should be precipitated with the use of iron or aluminum salts into phosphate and deposited |
| Aldehyde | Burn in a solution (benzine, ethanol), methanol can be oxidized into methane acid with the use of water and can be dumped into the sewer system after neutralization, accompanied by plenty of water |
| Alcohols | Should be burned separately or in a solvent |
| Aliphatic amines | Cover with NaHCO_3 , spray with a little water and flush into the sewer system with ample water |
| Liquid amines | Convert to a salt with NaHSO_4 and then burn |
| Halogen hydrocarbons | Mix with sand/calcined soda (9:1) or NaHCO_3 (in the case of fluoride compounds add slaked lime) and burn in the presence of paper, wood, or a solvent (caution: development of phosgene is possible!) |
| Chlorine | Introduce into a diluted alkaline solution and remove the appropriate hypochlorite through the use of $\text{Na}_2\text{S}_2\text{O}_3$ solution |

If toxic waste products are eliminated in their native state, a destruction commission, headed by the toxic protection referant/poison official, is to be established. Perfect records are to be kept with regard to the occurrence and disposal of toxic waste products by type, composition, and quantity, and this record is to be kept, along with the proof documentation in accordance with military regulations governing toxic substances.

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5911

CSO: 2300/169

RELUCTANCE FOUND IN USING SIMULATORS, TRAINING DEVICES

Use of APC Trainer

East Berlin VOLKSARMEE in German No 37, 1985 (signed to press 9 Sep 85) p 4

[Article by Capt Rolf Basan; first paragraph is VOLKSARMEE introduction]

[Text] Following an exchange of experiences with advanced students, stable and repeatable results in firing training using trainers and simulators are guaranteed. Communists discovered additional reserves at the course in preparation for the party congress. VOLKSARMEE in the "Max Roscher" Infantry Regiment on the trail of a response to the speech made by Erich Honecker during his visit to the troops.

A promise is a promise! The many-voiced vernacular uses but three words to characterize this catchy expression. Now: no one needs to remind us of the promise which we made in VOLKSARMEE, No 14, 1985, on p 5. Under the headline "Trainers on Teeter-Totters and Under Tarpaulins" VOLKSARMEE dealt with the utilization of APC trainers. Good examples were obtained from the "Paul Hegenbart" Infantry Regiment which made the utility of these devices clear. There, they had a training complex mounted on tilting bars and it was being intensively utilized. Things were different in the "Max Roscher" Regiment because....

VOLKSARMEE had promised to ascertain during the second half of the training year that these APC trainers would not stand idle. And Comrade Erich Honecker was the one who, recently, during his visit with the troops, referred to the fact that the employment of training devices and simulators produced higher training results and, at the same time, affected savings in material resources. This is the thought that we wanted to pursue.

No Sooner Said Than Done!

The fire control tower of the firing range displayed a "red" signal. Staff Sergeant Major Werner Sanner is standing at the control console. This is the third training run for APC gunners of the "Huke" Infantry Company. Of course, they are not from the training facility. Two APC's are moving slowly toward the target area and are rocking gently. "During the third practice run, tank targets are combated with ball ammunition. This is not possible with trainers." SSgt Maj Sanner, who provides this information, turns out to be a

knowledgeable conversation partner. Last December he had brought the three simulators from the producing enterprise. Even then the chief mechanic for APC turret armaments at the "Beckmann" unit had been enthusiastic about the many advantages which were listed in the appropriate literature: Three combat training vehicles can be saved. The gunners and guided missile controllers practice all activities involving weapons, targets, and observation instruments as well as those pertaining to guns and missile guidance systems in the actual APC. And: Trainers can observe all phases of activities in the turret and can train several soldiers at once.

Naturally, such a simulator does not completely replace an APC. But no one is demanding that. Simulators are primarily effective training aids. They serve to provide effective and intensive firing training. This is the argument used by SSgt Maj Sanner with superior officers and in the membership meetings of the SED basic organization. The training complex should be made usable for training purposes quickly. But there were questions: Who would be responsible for the maintenance and repair of the trainer? Who "would be wearing the hat" if something went wrong? Other problems turned up and were clarified through personal engagement and in the collective. (More on this can be found in our interview with Lieutenant Colonel Wolfgang Schneider.)

In the "Anton Saefkow" Motorized Infantry Regiment the training officers from the "Max Roscher" Regiment were able to observe a training complex in action. They collected valuable experiences, received answers to their many questions. But simple "copying" was not possible. An example: In the "Anton Saefkow" Regiment trainers were assigned to three units. Each unit was responsible for one trainer and used it to train its gunners and missile controllers. The advantage: clear relationships with respect to maintenance and repair. Disadvantage: If a unit would like to use all three simulators at the same time, it must first reach the appropriate agreements with its neighbors. In the "Max Roscher" Regiment things were different. There, one soldier assigned to the training facility is responsible for the entire training complex. Before each firing training episode, Private Michael Felsch turns over the simulators to whoever is responsible and, with them, checks the employment readiness of the simulators following the training session. "There can be no complaints," we have learned from him and, furthermore, we found out that during the past 4 months barely a day has gone by that the training complex has not been utilized. And there have been no malfunctions of the various modules. The simulators are said to be robust and very reliable.

This is pleasing information. The training of gunners and guided missile controllers began on simulators immediately following the time the training facility was provided with equipment. The responsible comrades took their promises very seriously and fulfilled them.

Good Simulators--Good Training?

Once more, a run of troops has returned from firing exercises. Corporal Frank Eisenblaetter passes a round out of the turret hatch. He had hit both tanks on the first try. He also fired at machine gun targets, expending less ammunition than expected. Ideal conditions? Lucky? "Neither, nor," he replied

and smiled because he obviously did not owe his success to coincidence. On the contrary: "Strong wind gusts did not make it easy for me to compute the lead angle magnitudes. But what has been learned has been learned. We underwent frequent firing training using APC simulators; we also used them to fire our practice rounds. This is where I learned everything in order to be able to combat any target with the weapons of the armored personnel carrier rapidly and certain of achieving a hit." Major Ulrich Pekruhl was responsible for the training of gunners and guided missile controllers of the "Beckmann" unit and can confirm this. "The simulators are excellent devices. Our training officers are better able to recognize the individual weaknesses of every soldier through expanded control possibilities and can influence them appropriately.

However, the decisive point is, as always, the relationship between man and equipment. The APC simulators are not training automatons which can produce success in and of themselves. Their effectivity is determined by the abilities of the training officer. That is why training officers underwent a methodological training course of demonstrations on how the simulators can be effectively used. Form of training using the simulator complex which the comrades and the "Max Roscher" Regiment have dubbed "fire control" has proven particularly effective. In this problem each gunner/guided missile controller must independently recognize an undetermined number of targets. Small ones and large ones. While stationary and while moving. Near and far away. This demands the highest amount of concentration and the correct use of aiming and observation instruments. When a target is identified, the preliminary data for firing must be determined and reported. Finally, the target is aimed at and combated. "This is the way in which the simulators help us train the soldiers for the requirements of combat," says SSgt Maj Sanner. Good and very good results in all training exercises during this training half-year prove him to be right. We were able to convince ourselves of this also on this very day. All soldiers fulfilled the conditions of the third training cycle and thus proved the success of the effective and variation-rich training which can be facilitated with the use of APC simulator complexes. Does this say everything there is to be said? Certainly not. VOLKSARMEE will continue to pursue the question as to how trainers and simulators and other training aids, which we can find in all troop components, are proving effective.

A promise is a promise!

Unit Commander Interview

East Berlin VOLKSARMEE in German No 37, 1985 (signed to press 9 Sep 85) p 4

[Interview with Lt Col Wolfgang Schneider, commandant of the "Max Roscher" Motorized Infantry Regiment, by Lt Lutz Panhans; date and place not given]

[Text] Four questions addressed to Lieutenant Colonel Wolfgang Schneider, commandant of the "Max Roscher" Motorized Infantry Regiment, on the quest for more intensive and more effective training using simulators.

[Question] Comrade lieutenant colonel, what reactions were caused by the critical remarks published in VOLKSARMEE, No 14, 1985, about the unutilized APC simulators in your area of responsibility?

[Answer] In all honesty, it was unpleasant for us to be standing here as guilty parties in public. We do not normally have to hide our light under a bushel, so to speak. It also bothered us because, as could be seen from the contribution, the use of APC simulators, for example, had already been proven in the "Paul Hegenbart" troop component. In short, we immediately activated a study group, consisting of officers of the regimental staff and of the battalions responsible for the training of gunners and missile controllers. They were expected to study experiences which had already been made on the spot. Immediately after their return and after the training facility was equipped, the APC simulator complex went into operation.

[Question] What was the cause for this follow-up move in your troop component?

[Answer] Well, most likely in the old experiences which say that nothing ever happens on its own volition. Departmental thinking hampered some of those responsible in clarifying the question as to who would be responsible for the activation and maintenance of the APC simulators. The manufacturer had provided such detailed instructions which, in principle, excluded all doubts. In order not to create any additional administrative barriers, the communists in the SED basic organization joined the responsible training officers in order to remove all obstacles in the path of constructive training. What was particularly useful was the pressure by such comrades as Lieutenant Colonel Bodo Beckmann and Staff Sergeant Major Werner Sanner.

[Question] What first experiences do you see in the application of APC simulators?

[Answer] Some are pretty obvious. Since all preparatory training for the second and third training cycle can be accomplished under realistic conditions with turret machine guns using the simulator and, thus, the approach by real APC equipment is obviated, the savings in motor fuel are enormous. Added to this is the gaining of time and efficiency. Because the training officer can exercise immediate control, subjective evaluations are excluded and mistakes are checked immediately. Combat station training for all elements can be included, as can the overcoming of psychological inhibition thresholds involved in servicing the electric loading devices. Furthermore, available time for those responsible and for APC crews is increased with the elimination of time-consuming preparation and maintenance of the equipment. Also, the responsibility of one soldier for the entire training complex has proven to be effective. However, reserves are even now indicated, such as those identified during the conversations on preparations for the 11th party congress.

[Question] What are these?

[Answer] For example, training with respect to fire control for the entire platoon is conceivable provided the APC simulators are networked. There are also considerations indicating the possibility of gun-aiming training on the move. A supplemental instrument, which would be useful for this purpose, was discovered by us at an innovator fair of the military formation. We absolutely wish to devote more attention also to performance comparisons between

units using simulator complexes. In conclusion, it can be said that: for the time being, there is no one who is not convinced of the advantages of APC simulators.

VOLKSARMEE Commentary

East Berlin VOLKSARMEE in German No 37, 1985 (signed to press 9 Sep 85) p 4

[Commentary by M.V.: "All Is Well That Ends Well?"]

[Text] A promise is a promise. This is how the above investigation regarding the use of APC simulators begins. Who does not know how difficult it sometimes is to actually implement this lofty word? That was the reason why VOLKSARMEE, as promised, granted with some mixed feelings, once more visited the "Max Roscher" Motorized Infantry Regiment. However, fortuitously, more had happened there in the meantime than the overdue activation of simulators. Progress was made, in the meantime, also with respect to military-economic thinking and action. And the communists, as can be read in the interview with the commander--were in the forefront. They removed barriers which had been considered to be invincible. But does this really mean that all is well that ends well?

Not at all. Because a once-attained good conscience does not, by far, make a permanent headrest. Those who were still behind 6 months ago and were studying the experiences of others tend to prove this. Today, they set the pace, they have recognized that there can be no limits to combat readiness, and they even see reserves.

For example, fire control for a platoon following networking of APC trainers or performance comparisons between units. But, in view of the sharpened imperialist confrontation course, can it be left to VOLKSARMEE to identify such good experiences and to publicize them? Or must study groups be activated in every area for this purpose? Do we leave it to chance whether a supplemental instrument, which is usable for gunner training on the move, is discovered at the innovator fair of the major military unit and is then also utilized? Or does each regiment invent its own?

During his visit to the Air Force/Air Defense Command, Erich Honecker said he considered the use of training devices and simulators to be very troop-oriented and he stressed that still better training results and material resource savings can be achieved in this manner. The general secretary of the Central Committee of the SED said that this contributes toward realizing comprehensive intensification, even in the military sector. VOLKSARMEE believes that intensification should include the exchange of the best experiences in a goal-oriented manner and continuously, even during service discussions among commanders. This is the cheapest investment favoring a maximum growth in combat strength and combat readiness in line with party congress goals.

The good final result of our investigation is a positive matter. However, this does not mean that everything is well. There are many locations where much can be done better. Consequently, VOLKSARMEE is far from satisfied and will also check in the future whether trainers and simulators are utilized effectively. After all, what is promised remains promised for the long pull.

ACTIVITIES, ACHIEVEMENTS OF CHEMICAL OFFICERS' SCHOOL

Warsaw ZOLNIERZ POLSKI in Polish No 46, 17 Nov 85 p 10

/Article by Leszek Ziolo: "In the Military Chemists' Workshops: Protecting Nature"/

/Text/ The Higher Officer School of Chemical Warfare /WSOWChem/ in Cracow is not just another educational center for young officer training. It is a breeding ground of interesting and original conceptions, inventions, and improvements, which provide for a valuable contribution by the military academy to the development of chemical sciences. Problems connected with defense and with protection against various kinds of contamination obviously prevail. In this area the Cracow officers have clocked in quite a number of major achievements.

The second mainstream of scientific research concerns qualifying papers, that is to say, projects undertaken towards dissertations which qualify /cadets/ for master, doctor, or assistant-professor degrees. It is not just a pursuit of "art for art's sake": solutions of theoretical problems promote practical solutions and provide a base for studies implemented not just by the military.

Finally, the third group of research includes papers which meet the needs of the national economy. They are undertaken to orders by the interested enterprises. Such undertakings require extensive knowledge in the area of chemistry and kindred disciplines, as well as specialized equipment and laboratories. In case of disasters, self-control and aptitude for swift decisionmaking are also necessary. In situations like these, there is no time for lengthy deliberations and experiments, decision must be made at once, or at worst following a few tests.

That was just what happened following a breakdown which took place 3 years ago at Dobczyce close to the Raba River. The outflow of toxic substances and detergents near the place where the Oil and Gas Exploration Company was engaged in research, posed a major threat to Cracow's drinking water intake. The situation deteriorated hourly. Finally it was decided to call on military chemists for help. Lt Col Marian Lodowski decided to neutralize the leak through sorption. It turned out to be the right decision.

Close to Problems of the Natural Environment

"The Dobczyce case was discussed at length throughout the region, and became well known in the chemists' community," says Lt Col Dr Stanislaw Warkocki, head of the chair of technical sciences at the WSOWChem. "Even earlier our teams had undertaken similar efforts, but saving Raba from biological death prompted various workplaces, unable to cope with chemical problems on their own, to call us for assistance. Of course, we could not oblige in every case. We preferred to engage in efforts which in one way or another might have enhanced our defense-oriented experience, or which might give our cadets an opportunity to do work liable to enrich their knowledge.

"We have also been involved in efforts which serve to protect natural environment," the colonel continues. "Not long ago a team of military experts prepared a system which prevents breakdowns of the chlorinating facilities used at the Celuloza plants in Wloclawek. Well, in case of a chlorine leak, such a disaster may trigger terrible consequences. We have therefore started strenuous, labor-intensive research, which allowed us to identify the most accident-prone points. We designed an electronic system for measuring contamination, and prepared a detailed contingency plan for rescue operations. According to our instruction, scores of special sensors were installed throughout the factory. One can therefore say that Celuloza achieved the best possible safety precautions. We have profited as well, since it was a rare opportunity to use a whole set of experiments with chlorine and its compounds, and to look for the best ways and means to neutralize the gas. In addition, our school received a half million zlotys to buy teaching and laboratory aids."

Another example, this time from Cracow. Thanks to research undertaken by the WSOWChem, several local enterprises have introduced measures to remove plating cyanides.

Cyanides appear wherever metal is being plated. Those are strong poisons, their solutions dissolve gold and silver. Such dangerous chemical compounds, indispensable in modern industry, are--when disposed of as waste--never quite free of toxic properties. The Cracow chemists managed to invent a way for effective removal of cyanides from the environment. The method designed in the WSOWChem has been implemented since in the Szatkowski plants and in Alwernia; recently the Andrychow Compression Engines Manufacturing Factory has used it as well. Nothing prevents other enterprises from introducing similar infallible solutions.

How to Dispose of Heavy Metals

A breakthrough invention made at the Cracow military academy still awaits patents and distribution. Its authors allowed us to reveal some of their scientific secrets, and thus to become the first ones to disclose how to deal with heavy metals.

The problem, undertaken and successfully solved by a team led by Maj Dr Edward Brzezicki, concerned the technology of disposal of heavy metal salts from industrial waste. Let us explain it one step at a time.

Technology indicates something, which had not been there originally, but was created thanks to unflagging efforts of the entire team. Technology means therefore the way to do things. Military chemists have found the way.

To continue: heavy metal salts. Those are chemical compounds which consist of metals such as, for instance, cadmium, chromium, zinc, or lead. Each one is most harmful for people, animals, and plants. One of them, lead, has even been blamed of having brought about the decline of ancient Romans. Appalling amounts of lead are being found in their bones--because of their having used dishes and water pipes made of this metal. Because of lead, successive generations had degenerated, and when healthy peoples from the north threatened the city of Romulus, the Romans, "stuffed" with lead, were unable to mount an effective defense.

While it is true that we do not use leaden dishes, lead appears in automobile combustion fumes, in the smoke of power stations, and in industrial waste. Let us hope that the latter source of heavy metals pollution will soon be neutralized, thanks to the method worked out by Maj Brzezicki and his aides.

"I was glad to approve the suggestion to look for means of effective disposal of heavy metals from the environment," says Maj Brzezicki. "It is a major satisfaction for anyone who dabbles in science to be able to serve nature and the man's natural environment. For me personally it was a particularly close subject, since the military has taught me to care for the natural environment. I remember exercises at the firing range, when I was still wearing the cadet's uniform of the Military Technical Academy. We were most careful to leave the woods in the same condition we had found them, and not to cut a single branch without good reason. I have retained this respect for nature."

To come back to the major's research: Numerous factories use heavy metal salts in production, or else turn them out as by-products. Those salts, as waste, reach drains and purification plants.

None of the methods actually used guarantees total elimination of such salts. They are being more and more diluted, more and more dissolved, until they reach a degree of concentration which is no longer a health hazard; unfortunately, they have the nasty propensity for secondary cumulation. Moreover, how long can you go on diluting them?

"Our method, in a nutshell, consisted of finding an absorbent which thoroughly gathers heavy metal salts," explains Maj Brzezicki. "Absorbent is a substance on whose surface particles of another substance gather. In our case, such 'other substances' meant heavy metal salts. We had to find out a compound which would attract heavy metal salts from the mass of waste, like a magnet which attracts file dust. After protracted

experiments, which lasted for many months, after having tested thousands of substances in our laboratories, we finally found such an ideal absorbent. Not expensive, easily accessible, and perfectly absorbing the most dangerous pollutants. Now the major effort of our entire team should soon be crowned by patents."

Military chemists tested the new absorbents in the sewage-clearing plants of the Cracow Communication Equipment Factory. The results allow for optimism. Let us also add that, while testing the absorbing properties, they have found many interesting substances which might be successfully used to neutralize lethal chemical weapons.

Phials With a Mysterious Substance

Col Warkocki has no doubts that the technology designed by his subordinates will find a lot of interest in the industry and among "environmentalists." There are sure to be more parties interested in cooperation, and orders will keep coming. Only a part of them may be fulfilled.

During our conversation the subject of accidents and breakdowns keeps recurring.

"We mentioned Dobczyce," recalls the colonel. "That was a natural disaster, but quite a different event recently took place near Tarnow, where human carelessness was to blame."

As it happened, a tank with 18,000 liters of concentrated muristic acid, started on a long journey. The vehicle with its dangerous load had no pilot, and what was worse, the driver had no idea what he was hauling! Unfortunately, at a hair-pin bend the tank overturned and fell into a ditch. The driver called for help. A tractor arrived and tried to extricate the vehicle, using a rope fixed to a valve. The valve gave up and muristic acid started to leak out in steaming fumes, filling the ditch and covering the roadway. Firefighters and police were alerted. Somehow, somebody called the WSOWChem. A team headed by Maj Brzezicki immediately arrived at the site. They managed to stop the leaking acid, and chemists then neutralized the spillage. But what might have happened, had all of it spilled over the fields? The whole area might have been lost to man for many years to come.

Chemists are being approached by people asking for expertise or for disposal of substances of unknown origin. The National Museum, for instance, asked for neutralization of arsenic, mercury chloride, phenol, and "one-liter containers of unknown liquid." One cannot refuse, but first it had to be ascertained through tests what this "unknown liquid" was all about.

Once, the major was woken up in the middle of the night. Some mysterious phials, labeled by a death's-head, had been found in an attic. No one was brave enough to dispose of them. The major not only took them away, but submitted them to meticulous tests, which revealed that it was muristic acid, used in wartime to start fire extinguishers.

One could recall many other tales about various achievements of military chemists, about their generosity and mastery of their trade, about their inventions and ideas which serve the economy, nature, and society. They themselves regard their contribution to the environment as something very natural and very necessary.

12485/12276

CSO: 2600/211

DEVELOPMENT OF MILITARY SOCIAL SCIENCES NOTED

Warsaw ZOLNIERZ WOLNOSCI in Polish 18 Dec 85 p 3

/Interview by Lt Jan Borkowski with Prof Col Stanislaw Jozef Sokolowski:
"The Rank of Social Sciences"; date and place not specified/

/Text/ Col Stanislaw Jozef Sokolowski, professor and cerified doctor, is the commanding officer of the Educational Studies Department, at the Feliks Dzherzhinskiye Military Political Academy. His research and teaching activities deal with problems of logics and philosophical methodology of concern to the military. Among others, he published: "Logics in Command and Management" (1972); "Decision and Action" (1975); "Philosophical Problems of Military Social Sciences" (1981).

Lt Borkowski: One can probably accept the following statement: Civilization breeds growing complexities in human life, as well as in the acts of individuals and human collectives.

/Answer/ Yes, that observation is not only logically sound, but--what is more important--actually relevant and significant. The evolution of civilization does indeed shape in various ways the contemporary human condition and man's individuality, as well as the way he participates in ongoing sociopolitical, economic, and cultural processes. The most essential point here concerns, in my view, the dynamic and the range of transformations usually described as the civilization metamorphoses. In this case we have in mind changes in areas such as economics, technical progress, technology, communication and information, as well as various stages of organizational activiites. The changes are multifaceted, mutually interdependent, and their accuracy and directions pose problems which are not just--or even not mainly--technological or organizational, but social and human ones. This happens because of the danger of ignoring or neglecting the role of man as the substance of the civilization processes, that is to say, of man as the supreme value; the point has been most explicitly made, for instance, in the draft program of the CPSU, as well as in the draft program submitted to the PZPR 10th Congress. The socialist educational system pays heed to this problem, and suggestions for its solution can be found in the party's programmatic documents.

/Question/ In W. Szewczuk's book, "Psychology in the Service of Life," one finds the following statement: "At the turn of the 19th and 20th centuries, when psychology was becoming a science, G. Heymans, a Dutch psychologist, predicted that after a century of accomplishments in the natural sciences and in the ensuing technology, what lied ahead was a century of hegemony of social sciences, with psychology as their vanguard." I do not wish to detract from the enormous achievements of natural and technical sciences, but I think G. Heymans was not mistaken in his forecast.

/Answer/ Yes, the rank of social sciences has indeed gone up for several reasons. Without undertaking a broader analysis of this interesting, but at the same time complicated, problem, I would like to point out that one of those reasons derives from the earlier mentioned problems of civilization. Social and liberal sciences are the ones destined to set out proper diagnoses and prognoses concerning the condition of the contemporary man, as well as to suggest actions whose implementation might bring its expected and desirable transformation. In other words, social sciences should suggest and justify directions and dynamics of social development and civilization, bound to strengthen the role of man as the substance, his supreme role in the general development of civilization.

/Question/ Professor, in the October issue of WOJSKO LUDOWE you wrote in an article, "The Subject of Their Research: The Military Community:" "Science is one of the elementary premises for actual and organizational improvement of military practice. What criteria do you use to define "science?"

/Answer/ The notion of science and its understanding are most complicated issues. To put it in a most general way, one can claim that science is a system of statements and hypotheses, methodologically verified, and socially and cognitively significant. Obviously that is not a definition of science, but only a suggestion for its interpretation. In social sciences, for instance, both interpretative and evaluative theses are relevant, that is to say, the axiological function is also important in some areas of contemporary science. What is practically significant, concerns the cognitive and the social functions of science, including its cultural and praxeological functions as well. The latter one signifies that science contributes to the improvement of man's actions, to the growth of their effectiveness and efficiency.

/Question/ Military social sciences emerged as a branch of research and teaching disciplines, and took shape following the Second Congress of Polish Science. From the point of view of the above mentioned criteria, how could one briefly rate their accomplishments?

/Answer/ Military social sciences are one of the branches of contemporary liberal sciences, and whatever justifies their separate treatment within other social disciplines, concerns mainly the subject matter of their research, namely the military community. Within these disciplines problems are being formulated, which deal with military life, with educational processes, as well as with party and political training activities in the armed forces.

/Question/ What subjects do military social sciences include?

/Answer/ These sciences include, for instance, disciplines such as military pedagogy, psychology and sociology of the military, or theory and methodology of party and political activities. Historical and economic disciplines, such as defense economics, also have their place among them. These disciplines are just examples, since full classification of such sciences, which after all are just parts of the Marxist-Leninist military science, can be found in appropriate specialized textbooks.

/Question/ The methodology of military social research takes a special place in the research projects undertaken inside the armed forces. Why are the methodological problems of such significance?

/Answer/ The significance of methodological problems is closely linked to the role science, including social sciences, plays in the armed forces. The effectiveness of these disciplines depends clearly on the degree to which they might be able to reflect genuine problems of military life. Relevant diagnosis of such problems, as well as their effective solution, would be possible only if we had appropriate methodology at our disposal. Hence the importance of methodological reflexion and culture in research and in educational activity in the military. I would like to say with utmost satisfaction that this point of view has been fully approved by the proper command authorities in the military; this makes possible the propagation of methodological knowledge and culture in the main departments of military education.

/Interviewer/ Thank you for the interview.

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CSO: 2600/207

BRIEFS

GDR ARMY DELEGATION VISITS--The delegation of the Main Political Administration of the GDR National People's Army, which visited Poland on 22 January under General Lieutenant Horst Bruener, was received by PZPR Central Committee Secretary Jozef Barula and by General of Division Tadeusz Szacilo, chief of the Main Political Administration of the Polish Armed Forces, who informed his guests about ideological and educational work among soldiers. "The sides exchanged information on party political work in their socialist armies and signed a cooperation plan for 1986." [Summary] [Warsaw ZOLNIERZ WOLNOSCI in Polish 23 Jan 86 p 1 AU] /12913

ARMY CONFERENCE ON YOUTH--The patriotic and defense training of youth is our common goal. This thought was in evidence at a meeting held at the Silesian Military District Club in Wroclaw which was attended by military district commanders and leadership cadres from voivodship committees of the Union of Polish Socialist Youth located in the voivodships in which units and institutions of the Silesian Military District are based. The meeting was attended by General of Brigades Tadeusz Kojder, deputy chief of the Main Political Administration of the Polish Armed Forces; Andrzej Kozlowski, a secretary of the executive committee of the Union of Polish Socialist Youth; and Captain Zbigniew Ciereszko, chairman of the Polish Army Youth Council. [Summary] [Warsaw ZOLNIERZ WOLNOSCI in Polish 4 Feb 86 pp 1, 8 AU] /12913

CSO: 2600/264

ROMANIA: U.S. HISTORIAN'S BOOK ON TRANSYLVANIA REVIEWED

AU281902 Bucharest AGERPRES in English 1702 GMT 28 Jan 86

[Text] Bucharest AGERPRES 28/1/1986--One of the remarkable achievements of the Scientific and Encyclopaedic Publishing House of Bucharest in 1985 is the publication in English of the book "The Idea of Nation. The Romanians of Transylvania, 1691-1849" by reputed American historian Keith Hitchins. It is to be published in French, too.

The author, professor at the University of Urbana, is well-known among experts as, for more than two decades, he has published studies on the Romanian people's history and culture, both in the USA and Romania.

A crowning of thorough research work, the new synthesis traces the development of the idea of nation with the Romanians of Transylvania between the end of the 17th century, when the principality of Transylvania was incorporated by the Habsburg empire, and the 1948-1949 revolution.

Outlining the social and political structures in Transylvania at the beginning of the surveyed period, the author shows that the Transylvania Romanians continued to be subject to double oppression. Though indigenous and making the majority in the Carpathian arc, they had to endure, beside social oppression, national discrimination instituted by the mediaeval pact "Union Trium Nationum" concluded by the privileged strata--Magyar nobles, Saxon patriciate and Szeckler commissioners--against the Transylvanian serf peasants after the stifling of the 1437 uprising at Bobilna.

Consequently, they were deprived of the right to participate in political life, the Romanian church was excluded from the admitted religions and, generally speaking, the Romanians were considered "tolerated" on their ancestors' land. The incorporation of the ancient Romanian province into the Habsburg empire preserved those oppressive and anti-Romanian feudal institutions, as the author notes, who also enlarges upon the fights waged by the Transylvanian Romanians against various forms of the Habsburg policy aiming at their denationalization.

It is in this context that the author includes the daring fight of Bishop Inochentie Micu (Greek-Catholic, 1929-1751), who claimed the Romanians'

equality of rights with the other coinhabiting political "nations". The American historian shows that Inochentie Micu based his request on the fact that Romanians were the majority population in Transylvania, that "they were entitled to a place of privilege because they were the oldest inhabitants of the land, having resided there continuously since the time of the Roman emperor Trajan in the second century".

The author also surveys the works of enlightened Transylvanians Samuel Micu, Gheorghe Sincai, Petru Maior, Ioan Budai-Deleanu who were continuators, in the 1770-1825 period, of Inochentie Micu's fight. They were a generation that distinguished itself not only through valuable historical and philosophical writings but also through their firm commitment to the fight for national emancipation materialized, among other things, in numerous petitions of which better known is "Supplex Libellus Valachorum" (1791). K. Hitchins assesses that the Romanian national feeling was to reach its modern form about the year 1848. The merit for it is due to the learned and political militants of 1848 like T. Cipariu, S. Barnutiu, A. Treboniu-Laurian, G. Baritiu, A. Iancu, Al. Papiu Ilarian, who made of the Transylvanian Romanians emancipation their credo. The author shows that the political fights of 1848-1849 highlighted the need to make efforts toward political organization and economic development, for the union of the Transylvanian Romanians with their brothers across the Carpathians, an aim that governed their actions till 1918 when it was to be attained.

Hitchins analyzes the facts in the European historical context. He highlights the positive influences of the liberal ideals in Hungary on the thinking of the generation of Romanian intellectuals, pointing out that they received enthusiastically the intentions of the Hungarian liberals regarding the reform of the economic and social relations in Hungary and Transylvania through the abolition of the feudal servitudes. This is how he explains the fact that in 1848--contrary to some hasty assertions--the Romanians were not hostile to the Hungarian revolution in the beginning, producing proofs of the confidence shown by Cipariu, Baritiu, Iancu in the Hungarian liberals' attachment to all peoples' right to develop free, as national entities.

Professor Hitchins makes an in-depth analysis all along his survey. The work is also impressive through the solid and wide-scope documentation from Romanian and foreign sources, their attentive analysis, the successful efforts made for deciphering the nuances, the logic of the arguments, the stringent, clear presentation of problems, the pertinent and objective character of the conclusions that coincide integrally, on the major questions, with those of the Romanian historians, attending to converging preoccupations for the observance of historical truth.

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CSO: 2020/88

BRIEFS

COOPERATION, TRADE WITH HUNGARY--Budapest, AGERPRES 6/2/1986--Budapest hosted talks between Petre Preoteasa, Romanian minister of technical and material supply and control of the management of fixed assets and Bela Szikszay, chairman of the state office for prices and materials of the Hungarian People's Republic. On the occasion the sides established measures for a development of the relations of collaboration and looked into the possibilities of product exchange between the two central bodies in charge of supply. The Romanian minister called on Jozsef Marjai, deputy chairman of the Council of Ministers of the Hungarian People's Republic. [Text] [Bucharest AGERPRES in English 1115 GMT 6 Feb 86 AU] /6662

ALBANIAN THANKS FOR ROMANIAN GREETINGS--To Nicolae Ceausescu, president of the SR of Romania and to Constantin Dascalescu, prime minister of the Government of the SR of Romania. We express our thanks for the greetings and wishes you conveyed to us on the occasion of the 40th anniversary of the proclamation of the People's Republic of Albania and we extend our wishes for prosperity to the Romanian people. Ramiz Alia, chairman of the Presidium of the People's Assembly of the People's Socialist Republic of Albania [PSRA]; Adil Carcani, chairman of the Council of Ministers of the PSRA. [Text] [Bucharest SCINTEIA in Romanian 4 Feb 86 p 3 AU] /6662

CSO: 2020/88

NEED TO COMBAT SOVIET 'FALSIFICATION' OF COUNTRY'S HISTORY

Tirana REVISTA PEDAGOGJIKE in Albanian No 3, Jul-Sep 85 pp 57-66

[Article by Agron Gani, Faculty of History and Philology: "The Anti-scientific and Reactionary Essence of Views of Soviet Revisionist Historiography on the Subject of History"]

[Text] The history of modern times and the history of Albania are among the subjects where the most important events and phenomena of world and national development are treated from the positions of Marxism-Leninism, particularly, such great events for our people as the anti-fascist struggle for national liberation and the period of socialist construction in Albania.

Connected with these important events is the task of our schools, which, supported by the teachings of the Albanian Workers Party and the works of Comrade Enver Hoxha, refutes in a reasoned manner the reactionary and anti-scientific views of bourgeois and revisionist authors who, having great means and funds at their disposal, have been mobilized with all their forces to belittle, slander and deny the anti-fascist National Liberation Struggle of the Albanian people, led by the PKSH [Albanian Communist Party] (today, the AWP) and Comrade Enver Hoxha for national liberation and the triumph of the people's revolution in Albania.

In this area, an important place is occupied by the Soviet revisionist authors, who flagrantly distort historical truth and have long ago cast aside all scientific objectivity, arriving at a flagrant falsification of the historical reality of the documents of our historiography.

In this article, we will consider the method of developing a critique of the views of Soviet revisionist historians regarding our struggle for national liberation in the subject of the history of modern times, in the lessons regarding the Second World War, and still more in the subject of the history of Albania, in areas relating to the Anti-fascist National Liberation Struggle of the Albanian people.

In the history of modern times, in subjects connected with the Second World War, and still more in the history of Albania, in subjects regarding the Anti-fascist National Liberation Struggle of the Albanian people, history teachers have made it clear to students that many Soviet revisionist authors, such as

politicians, high-ranking military officers, journalists and historians, distort the facts and create various absurdities in order to "prove" that allegedly the struggle of the large allied states of the anti-fascist coalition (England, the USSR and the U.S.) was the decisive and only factor in the liberation of Albania and in our people's revolution. They claim that the struggle of the Soviet Union, in particular, was the major factor in the liberation of Albania and in the victory of our people's revolution. These views and distortions have even been expressed in the highest Soviet state organs and by the highest authorities, not to mention their appearance in the official press of the Soviet revisionists. Thus, the congratulatory telegram sent by the Presidium of the USSR Supreme Soviet to the Council of Ministers of the People's Republic of Albania, on the occasion of the 17th anniversary of the liberation of Albania, said: "The decisive factor which gave the Albanian people the opportunity to cast off the foreign yoke and establish the people's power in their own country was the destruction of the German fascist hordes by the Red Army."¹

We also encounter this viewpoint widely in the works of Soviet revisionist historians which are devoted to the Second World War or to particular aspects of it. In order to argue against it, teachers can show their students that A.A. Grechko, ex-minister of defense of the Soviet Union, in his collected memoirs in the book, "Permes Karpateve" [Across the Carpathians], wrote that the assault operations of the Red Army in 1944-1945 played the decisive role in liberating the peoples of Austria, Albania, Bulgaria, Hungary, Norway, Poland, Romania, Czechoslovakia and Yugoslavia from fascist occupation.

It thus becomes clear to students that the Soviet authors deny and disparage the struggle of our people and of other peoples who also shed their blood for the common cause of destroying fascism.

The teacher stresses to the students that the Albanians do not deny, as the Soviet revisionists claim, the important role of the peoples of the Soviet Union and of the Red Army, led by J.V. Stalin, in the destruction of fascism on a world scale. This was a great help and a very important factor in the achievement of victory over the treacherous invaders by the enslaved peoples, and therefore by the people of Albania as well. This was stressed by Comrade Enver Hoxha, when he presented the first government program of the AWP in March 1946: "One of the most important factors in the victory over fascism and, therefore, a major external factor in the liberation of our country is the glorious place of the USSR."²

Supported by the ideas of Comrade Enver Hoxha, the teacher reinforces in class the idea learned earlier, that the major factor in the liberation and development of a country is the internal factor--the mobilization and launching into combat of all the material and moral forces of the people. This is all the more true for our country, since it is known openly that neither the Soviet Army nor any other foreign army set foot on Albanian territory. Our country is the only country in Europe which was liberated by its own forces, without the need of foreign military forces. Foreigners did not fight alongside our people within Albania. It happened that the Albanian people,

without in any way denying the help of the allies as an important factor in destroying the common Nazi and fascist enemies, fought by itself, tooth and nail, shod and barefoot, dressed and stripped, with arms and with every other implement that was at hand.

In order to reinforce this idea, the teacher can read to the students the following quotation from the work of Comrade Enver Hoxha: "During the Second World War, the Stalinist Soviet Army displayed heroism and made great sacrifices; it gave brilliant proofs of internationalism and it gave the death blow to the German invaders. But if we ourselves had not fought, if we had not had our strong, unbending party, we would not have achieved victory and complete liberation of the fatherland."³

It is important that the students should understand that the Soviet revisionist authors widely utilize another method as well in order to deny and disparage our national liberation struggle: silence in the face of the reality of the life and death struggle of the Albanian people against the Italian and German fascist hordes. Thus, one Soviet historian writes that in the countries of Europe, in the summer of 1944, the national liberation movement was broadened and that great successes were achieved in the fight against the fascist invaders by the national liberation army and the partisans of Yugoslavia and the patriots of Greece, Italy and other countries. Albania, in this case and in other publications, is not included among the countries which engaged in armed combat against the foreign Nazi and fascist invaders and the native Quislings, which implies that there was no movement in Albania, that the German invaders sat with their legs crossed in 1944 and ruled without encountering any resistance--in flagrant opposition to historical truth. It was precisely in 1944 that the Albanian National Liberation Army successfully smashed two large operations involving many German and Ballist [Balli Kombetar-National Front] forces. After the defeat of these operations, it launched a general attack which ended in the expulsion of the German invaders, the destruction of the traitorous Ballist forces and the complete liberation of the country, without the need of having allied armies enter Albania from outside.

It is important for teachers to know that the Soviet revisionist authors, confronted with the facts of documents which speak about the self-sacrificing 5-year national liberation struggle of the Albanian people, try to find new ways and forms to denigrate it. They treat our struggle in a simplified manner, as though it was engendered, developed and stimulated by the events which occurred in the Balkans and elsewhere. The Soviet revisionist historians speak very little about the struggle of our people and neglect the key moments and most important events of the heroic struggle of our people, as well as our general armed revolution. Thus, one Soviet revisionist historian, in an article published in 1978, treats several Balkan events, which according to him, allegedly influenced and determined the attitude of the Albanian people in support of the liberation struggle of other peoples. Included in these events are the Italo-Greek war and German aggression in the Balkans in 1941.

It should be emphasized to students that the aim of Soviet revisionist historians is to present the beginning of our people's struggle as having been stimulated by external causes and events. Aside from this, their aim is to deny the struggle of the Albanians and their resistance during the years 1939-1941, under the leadership of the communists, apart from the fact that they had not created the Communist Party. This accusation is refuted by confrontation with historical truth. Teachers remind students that little Albania was the first victim of Italian fascist aggression in the Balkans. Although it was betrayed by King Zog and the rich bourgeois landlord classes, a heroic armed revolt was made against the Italian fascist invaders on 7 April 1939, at a time when Albania's neighboring states, not to mention those of Central and Western Europe, were exhibiting solidarity with fascist aggression. There is great value, particularly, in Comrade Enver Hoxha's statement that: "We were the first state in Europe to become the prey of Italian fascism and the first people to fight with arms without expecting others to enter the war. As in 1939, when Europe was silent," declared Comrade Enver Hoxha from the court of the Paris Peace Conference on 21 August 1946, "the sons of our country were falling on the field of honor for a just cause which, a little later, would become a cause of all mankind."⁴

In the face of the confrontations and distortions of Soviet revisionist historiography, we must present the facts and their accurate interpretation, which we find embodied in the teachings of the AWP and the works of Comrade Enver Hoxha. Supported by these, we demonstrate to the students, with real facts, that the heroic resistance of the Albanian people against the fascist invaders began immediately after the occupation and continued and developed with ever increasing strength and in all forms. The great mass demonstrations of the years 1939-1941 were drowned in blood. The data indicates that 6,500 anti-fascist Albanians were thrown into prisons or concentration camps constructed in Albania or Italy. Many others were massacred in cities and villages of Albania for anti-fascist activities. Evidence of the resistance of our people is also provided by the fact that in 1939, there were more than 3,000 Albanian anti-fascists who had left the mountains and were making continual armed assaults against the Italian invaders and their tools. They represented the core of the subsequent partisan fighting units. But in the anti-fascist movement were also included thousands of other Albanians in cities and villages, who fought the enemy in the most varied ways. The whole Albanian people was conscientious in its heroic undertaking, which was filled with dangers and sacrifices: it was conscious of the fact that these battles would determine its fate and existence.

Criticism of the views of Soviet revisionists who attempt to present the Albanians as cowards, as people who avoided fighting the fascist enemy during the years 1939-1941 is also a matter of concern. The teacher can tell his students that the Soviet revisionist authors of Volume IV of the work, "Historia e Luftes Dyte Boterore" [History of the Second World War], published in Moscow in 1975, write that in 1941, in the deep mountain regions of Albania which are difficult to cross, platoons and small partisan fighting units hid themselves, were still in the formative stage and seldom entered into armed encounters with the enemy.

The students understand clearly that a more overt degradation is not possible of our people's struggle, about which Comrade Enver Hoxha writes: "You were never afraid of slavery of the swords of the enemy or his cunning or his burnings or his killings; you never bowed your head before foreigners and before treachery, but always stood tall, with head erect. In your belt, you carried pistols inlaid with silver, on your shoulder you carried flintlocks, in your hand you held a naked sword and you fought with fury.... History has taught you that those peoples who do not fight disappear, so you, my people, fought for freedom, for your language, for your customs, for your sacred soil and you did not disappear, but triumphed."⁵

In order to refute the slanders of the Soviet revisionist historians, we remind our students that the fighting unit of Peze did not hide in deep, inaccessible places, but operated with ever increasing strength in the immediate vicinity of Tirana and Durres. Its unceasing and completely efficacious assaults caused great alarm in the ranks of the enemy. The carrying out of several consecutive operations by Italian troops against the region of Peze, where the partisan forces led by the Hero of the People, Myslim Peza, were acting, indicates best that Albanians from the four corners of the country were in continual struggle with the occupier. Gradually, the partisan struggle caught fire not only in Peze, but also in Mallakaster, Skrapar, Kurvelesh, and Cermenike.

In treating the Anti-fascist National Liberation Struggle of the Albanian people, the teacher must bear in mind, in his criticism of Soviet revisionist historiography, the fact that the revisionist authors attempt to ignore or distort such important events of our struggle as: the general armed insurrection in its three phases, the failure of the enemy operation in the winter of 1943-1944, the spring assault by our national liberation army in April-May 1944, the failure of the enemy operation of June 1944, and the actions and general assaults of our army which led to the conclusive victory of 29 November 1944 and to the complete liberation of Albania.

Another important problem which must engage the attention of the history teacher, in connection with the problems of the Second World War and, in particular, of the Anti-fascist National Liberation Struggle of our people, is the unmasking, by means of scientific arguments, of the absurd claims of Soviet revisionist historians regarding the so-called assistance with arms, various military materials, financial resources and even troops, which the Soviet Union supposedly gave Albania during the war years. Thus, one historian writes, in an article published in the revisionist journal NOVAYA I NOVEYSKAYA ISTORIYA, that the material assistance given by the Soviet Union to the national liberation army played an important role in the liberation of Albania. Another work goes even farther. It claims that allegedly during the year 1944-1945, the Soviet Union gave our national liberation army 350 cannons, about 1,000 automatics, more than 15,000 rounds of rifle ammunition, and a great deal of other military materiel. The absurdity reaches its height when it claims that Soviet military aircraft supposedly brought us Soviet soldiers sometimes.

It must be clear to the students that these claims by the Soviet revisionist authors are in flagrant opposition to historical truth. It is well known that the forces of the Albanian National Liberation Army, although they considered the Red Army a support and correctly evaluated its role in the destruction of the fascist beast, "did not obtain any material, arms supply or clothing from the Soviet Union or from the command of the Yugoslav National Liberation Army, which received considerable assistance of this type from the Soviet Union."⁶

The Soviet Union gave economic and military assistance to the partisan movement in other countries of Europe, such as Poland, Czechoslovakia, Yugoslavia, etc. In this area, the students can also be given figures. Thus, for example, during the war, the Polish Army received from the Soviet Union about 700,000 rifles and automatics, more than 15,000 heavy machine guns and mortars, 3,500 cannons, 1,000 tanks, 1,200 airplanes, etc. During 1944-1945, the Soviet Union gave Yugoslavia a great many weapons. Many of these supplies passed through the Soviet military base established at Bari, in Italy. Understandably, the teachers perceive that with the establishment of this base, possibilities increased for the Soviets to help the struggle of our people, but in reality they gave them nothing in their struggle for freedom.

It must be explained to the students that the reasons for this attitude on the part of the Soviet apparatchiks has been analyzed scientifically by Comrade Enver Hoxha in his major work, "Titistet (Shenime Historike)" [The Titoites (Historical Notes)]. In this work, he shows that the history of the Anti-fascist National Liberation Struggle in our country and that of subsequent years best proves the fact that the Soviets, beginning from the time of the Second World War, have not shown any interest in us. They did not know much about the centuries-old history of our people, which had passed in continual struggles and efforts for freedom and national independence, nor about our National Liberation Struggle. Even the Soviet military mission which came to Albania at the end of the war did not see or understand the greatness and depth of the struggle of our people and party. This means not only that the mission consisted of ordinary people, but also that there was a lack of necessary interest on the part of many Soviet leaders in our struggle. Their true attitude, as is well known, was an anti-Albanian one and it appeared openly after the death of Stalin. As Comrade Enver Hoxha writes, "As may be judged, they were interested in and very well informed about the national liberation struggle of Yugoslavia and must have had more faith in it, at a time when they did not have faith in the Greek National Liberation Struggle, while they did not consider us of any account; they did not know us at all and they defended us because it was necessary for them to maintain their principles. As is well known, the Titoites only informed them very little about us. But this, in fact, pleased them and the Soviet leaders must have reached the practical conclusion: 'Let the Yugoslavs deal with the Albanian partisans'."⁷

With regard to the problem of concrete assistance, Comrade Enver Hoxha, keeping in mind Molotov's declaration that "We give economic assistance for

Albania through Yugsolavia," reached the conclusion: "Since 'Yugoslav assistance' did not amount to anything, we may conclude that Soviet assistance did not exist up to the moment when our relations with Titoite Yugoslavia were broken off."⁸

On the basis of the works of Comrade Enver Hoxha, we refute in a reasoned manner the other claim of the Soviet revisionist historians: that Soviet diplomacy allegedly played a decisive role in saving Albania from the danger of falling under the domination of Anglo-American imperialism during the Second World War. Thus, the authors of a work devoted to the Patriotic War of the Soviet Union write that Albania, without the support of the Soviet Union, would easily have become the object of intervention by the United States and England. This view is also expressed in various revisionist organs and journals.

Students who have become acquainted with the history of the national liberation struggle of our people understand immediately that these claims run counter to historical truth. Comrade Enver Hoxha, in his work "Rreziku Anglo-amerikan per Shqiperine" [The Anglo-American Threat to Albania], proves with many facts that "The party, by its heroic struggle and revolutionary vigilance, saved the people and the fatherland from many dangerous traps which the English pseudo-allies set behind our backs."⁹

On the basis of the work of Comrade Enver Hoxha, the teacher refutes the attacks of the Soviet revisionist historians and reinforces the idea that the Albanian Communist Party and Comrade Enver Hoxha have great historical merit because while they considered the Anglo-Americans as allies against fascism, they did not forget for a moment their class nature, their aims against our struggle, the Soviet Union and the great cause of socialism and communism in the world. They preserved the independence of our country by not submitting to the Anglo-American strategy and the allied Mediterranean command, as did the leaders of the communist parties of Greece, Yugoslavia, Italy, etc.

It is the task of the teacher, by unmasking the aforementioned views of the Soviet revisionist historians on the Anti-Fascist National Liberation Struggle of the Albanian people, to prove in class that in terms of the political and ideological purposes that they attempt to fulfill, they are the same as the view of the bourgeois historians, the Yugoslav revisionist historians, etc. These views are nothing more than an expression of the contempt and denial on the part of representatives of large states for the decisive contribution of a small country and people like ours to the Second World War.

The teacher closes his critique of bourgeois and revisionist views--of Soviet revisionist historiography in our concrete case--in class by describing the great contribution made by our people to this war, the countless sacrifices it made in order to gain the freedom and independence which we enjoy today.

FOOTNOTES

1. ZERI I POPULLIT, 29 November 1961.
2. Enver Hoxha, "Vepra" [Works], Vol 3, p 314.
3. Enver Hoxha, "Kunder Revizionimit Modern" [Against Modern Revisionism], p 650.
4. Enver Hoxha, "Vepra," Vol 3, Tirana, 1969, p 423.
5. Enver Hoxha, "Pershendetje me Rastin e 40- Vjetorit te Clirimit te Shqiperise" [Greetings on the Occasion of the 40th Anniversary of the Liberation of Albania], ZERI I POPULLIT, 29 November 1984.
6. "Historia e Shqiperise" [History of Albania], Vol 3, Tirana, 1964, p 40.
7. Enver Hoxha, "Titistet (Shenime Historike)" [The Titoites (Historical Notes)], Tirana, 1982, p 463.
8. Idem. p 464.
9. Enver Hoxha, "Rrezikut Anglo-amerikan per Shqiperine" [The Anglo-American Threat to Albania].

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HOXHA'S WORKS AT CENTER OF IDEOLOGICAL EDUCATION

AU091808 Tirana ZERI I POPULLIT in Albanian 1 Feb 86 p 1

[Editorial: "Forms of Education Should Militate More Fruitfully for the Fulfillment of Tasks on All Fronts"]

[Excerpt] Comrade Enver Hoxha's work "On the Party" will be studied this year in the forms of education. This compendium, which has been published in three volumes, includes works by the beloved and unforgettable leader of our party and people that deal with a wide range of problems pertaining to the party, from the time of its founding and up to the present, and highlight, among other things, Comrade Enver Hoxha's valuable contribution to the further enrichment of the Marxist-Leninist doctrine on the party of the working class and its guiding role in the struggle against all the distortions and unscrupulous speculations of the modern revisionists of all hues and molds. The powerful ideas and valuable instructions to be found in the pages of these three volumes will constitute a great inspiration to the communists, cadres, and all the working people of our country to honorably fulfill the considerable tasks set out by the party and synthesized in the nationwide revolutionary movement "Standard-bearers of the Implementation of Comrade Enver Hoxha's Teachings." The party organs and organizations must therefore transform the study of the work "On the Party" into a great ideological action to master Comrade Enver Hoxha's teachings on the party, on its correct and consistent Marxist-Leninist line, on the party's leadership role in all fields of socialist construction and the country's defense, on the principles and norms on which its activity is built, on the qualities that must characterize the communists, and so forth. The party organs and organizations must also carefully scrutinize the advanced experience accumulated in organizing ideological actions and must place it better than ever before in the service of constantly raising the political and ideological standard of the communists, cadres, and the working people.

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CSO: 2020/85

CARCANI AT SHKODER PARTY ACTIV MEETING

AUL31013 Tirana ATA in English 0730 GMT 13 Feb 86

[Text] Tirana, February 13 (ATA)--The meeting of the party activists of the District of Shkoder was convened yesterday. It will discuss some important actions in the field of economy, in implementation of the instructions of the 13th plenum of the Central Committee of the party, which will give a further impetus to the frontal realisation of the tasks this year.

The meeting was attended by cadres of the party and government organs, managers of the economic enterprises and the agricultural enterprises, representatives of the districts' mass organisations, as well as chairmen of the executive committees of the people's council of northern districts and others.

Present was also the member of the Political Bureau of the Central Committee of the party and the chairman of the Council of Ministers, Comrade Adil Carcani.

In his report the chairman of the executive committee of the district people's council, Faik Cinaj pointed out the measures adopted and the work being made to implement the decision of the bureau of the district party committee on the acceleration of the work rates in the project for the irrigation of Shkoder from the lake of Vau i Dejes hydropower station, on the increase of the maize and tobacco production, on the further raising of the number of heads of the smaller cattle and the creation of the herds of which the units of arable land and fruit-growing, etc., will take care. Likewise representatives of the districts emphasized in their contributions the work and actions that have been undertaken to frontally carry out the tasks of this year.

Comrade Adil Caracni, too, took the floor in the meeting. On behalf of the Central Committee of the party and the Council of Ministers and Comrade Ramiz Alia personally, he congratulated the party organisation of Shkoder District, which, as the 13th plenum of the Central Committee of the party instructed, has turned the actions into a method of work for the successful realisation of the tasks of the 1986 plan.

He expressed his conviction that the communists and the working people of Shkoder District, in steel unity round the party and its Central Committee with Comrade Ramiz Alia at the head, will turn 1986 into a year of intensive work and revolutionary actions to realise the set tasks and objectives.

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CSO: 2020/85

QUALITY OF RECENT LITERATURE EXAMINED BY WRITERS, ARTISTS UNION

Tirana DRITA in Albanian 17 Nov 85 pp 1, 3

[Article: "With Common Concern for Artistic Quality"]

[Text] "What Came out From the Meeting of the Writers and Artists Union?"

The meaning of quality as a matter of artistic content and of achievement in creativity. What is the result of the psychology of coexistence with the average? The advantage of going to the grassroots by writers who work in offices and the danger of transforming the house into an "office." The criticism that flattens literary values promotes averaging and leaves mediocrity in the corner. The writers' critical thought also makes criticism. When you write hundreds of literary pages and do not write 5 to 10 pages of literary criticism. The writer creates the work; but the editor has also his noticeable role in regard to the ideological-artistic level. Sectorial thinking must not be confused with general literary opinion.

The meeting that was held last week at the Writers and Artists Union, showed that the creative people, critics and workers of the printing and artistic (stage sets and motion picture) institutions have a common concern and involvement in regard to solving the concrete tasks stemming from Comrade Ramiz Alia's speech at the meeting with creative workers in Korce. Both in the opening speech by Llazar Siliqi, secretary of the Writers and Artists Union, and in the speeches delivered by comrades Dalan Shaplllo, Razi Brahimi, Stavri Kristo, Zoja Cela, Kice Blushi, Dhimiter Shuteriqi and Fatos Arapi, it was stressed that the attention must be concentrated on two main fields: on the continuous and systematic work of the creative workers to improve the level of creativity through involvement in the great problems and concerns of the people, strengthening realism and artistic skills, and on further improving organizational and inspiring work forms in the union, in its sectors and literary organs, in the "Naim Frasheri" publishing house and in other artistic institutions.

The activities of the union and of the writers themselves have a particular importance for new achievements in the struggle against the average and even more against mediocrity. The requirement for a more determined struggle assumes today a special force, because now we have notable achievements, literary works with high artistic and ideological value, which are dear to our people and precious to and esteemed by foreign readers and lovers of art.

Therefore, the higher level of our literature and art and the present stage achieved by our country and readers never accept mediocrity and accommodation to the average. Comrade Ramiz Alia stressed that "culture in Socialist Albania, having a deeply popular character, belongs to all social strata" and "the spiritual and material development must progress parallelly." This, therefore, implies the need to improve the qualitative level of our literary creativity in order to respond to the requirements of the time.

When we speak about artistic and ideological quality, it is necessary to have a deep and complete understanding about it, as a matter connected with the problems of content and forms. This was pointed out especially by those who participated in the discussions, because, not infrequently, quality is demanded only in regard to creative skills and artistic forms. Comrade Ramiz Alia pointed out that genuine art bears and expresses the great problems and concerns of the people, reflects the present with profound realism and provides prospects for the future and solutions. This means that the matter of artistic quality must be understood, first of all, as a matter of content. What are the phenomena, problems and subjects that writers grasp from reality? They express the characteristics of life in development, the essential differences and the main concerns of the people. If the problems essential to the life of society and to its struggle for the building of socialism are treated with realism, then, also the artistic forms and means of expression will undergo renovation. However, there is harmony in this relationship when deep knowledge exists and when there is serious and continuing perpetuation and involvement on the part of social and party-minded militants. But, with a superficial knowledge, one can "burn" and artistically compromise important themes and problems. Therefore, it was stressed at the meeting that the process of gaining a deep knowledge of life, through the work forms organized by the union, as it is being carried out this year and, particularly, by the initiators themselves, should be a continuing concern and be converted into a work method and style. It is useful when the union creates opportunities for writers who work in offices to go to the grassroots for 6 months; but, one must be attentive to cases when a writer transforms his house into an "office," that is, making a lukewarm life, a confined life. The knowledge of life, the comprehensive formation of writers and the satisfaction with impressions are not seasonal matters nor are they confined to the construction site or area when you have an idea or a subject that stirs you up. Such a "practice" runs the risk of shallowness and schematism.

On the contrary, when the process of gaining knowledge is continuous and inspiration is also continuous, the "arousal" of essential themes and issues exerts pressure on the creative awareness of the writer. Later on, when the concentration on a determined theme, problem or subject begins, then a more thorough knowledge can be obtained. Precisely at this stage, a certain event and its models assume priority and the writer starts "digging" to a greater depth. It is here that quality often has its roots, because, as it was pointed out at the meeting, the matter of quality is entirely a matter of realism. Average works and, especially mediocre works, first of all, have not realism. Many dramas or novels are lacking the force of realistic reflection; therefore, they have no artistic and ideological quality. Without

thorough realistic reflection, you cannot embody in art the essential differences, life conflicts, strong characters with individual qualities, deeply spiritual people and ardent literary speeches.

There was the opinion that many novels published in the past 2 to 3 years are of a satisfactory artistic level; however, all of them are not read by the creative workers and have not been properly monitored by criticism. This opinion must be seen from several aspects. It is true that there are writers who do not continuously read each other's works, just as there are critics who do not regularly monitor the literary process; this must not happen. Also, among the novels published during the past years, there are works of a high level, about which the critics have written and must write more. To present the problem in a general manner and to confuse the failure of certain people to read all novels with the general literary opinion means to judge from a sectorial position and to feed yourself with an empty spoon. The general literary opinion is this: regardless of some achievements, the level of novels published during the past years is still below the requirements of the time. Only by creating with full self-knowledge in regard to achievements and shortcomings, determining and working with great objectives, will our writers and publishers further improve the level of their novels.

Staying with the people, where they work and militate not only gives writers their themes, subjects, and vital prototypes and characters, but also helps them to understand thoughts, tastes and demands of their readers. Standing beside their readers, writers learn what pleases them and what works they call average and mediocre. Because, a reader, when he becomes a friend of the writer, does not speak to him from the rostrum of the "presidium" of the meeting or the conference, but expresses himself with sincerity and makes observations and suggestions which, sometimes, are not covered by professional criticism. From his friend the writer learns that the meaning of average, its level, changes from one literary stage of development to the other. Anyhow, the average will exist, but one must not coexist with it. When aiming at noteworthy literary works, the average level also improves from one stage of development to the other. If you accommodate to the situation of the average today, tomorrow you may find yourself in mediocrity, because life, the times, social development and readers' tastes progress, increase, and improve. In this understanding, to speak about artistic-ideological quality means to speak about the enrichment of the national cultural works, about the tastes and progress of your people. Therefore, it is essential for every writer to make a critical evaluation of his own work, to be more demanding in regard to his creative results. When the party and general social development demand higher quality in creativity, everyone must think more deeply about his own work, about what he intends to write, about what he is writing or what he has just finished. (As a matter of fact, when he deems it necessary, the author can go to the publisher and ask to review his work, although he has already handed it over.) The attitude of seeking to improve one's work is not simply ethical; it is also the evaluation of the masses of readers and of oneself. The feeling of responsibility for creativity is linked not merely with the "schedule" of the creator's work, but also with its effect on the masses of readers. Comrade Enver Hoxha compared artistic literary

works, in regard to usefulness, to the giant hydroelectric power stations, comines and wheat-filled plains. This, however, is an attribute of notable works with a high artistic and ideological level, because, as Comrade Ramiz Alia stressed at his meeting with creative workers in Korce, "without the improvement of the artistic and ideological level, the very educational effect of art is diminished." An average level in creativity and average tastes and demands in publishing and theater productions hinder art and are not encouraging for research work and for improving quality.

In this connection, a more intensive development of literary criticism, and increased efforts to confront the problems stemming from the literary process, play a special role. Reading the reviews which are published one can see that, in regard to works, there are evaluations and considerations that are repeated in cliché form. In many cases, the authors of these writings are known critics or writers, with individuality. Then, how can you explain this uniformizing attitude? Here, it was said at the meeting, among other things, one can feel the lack of a critical attitude in regard to average values. This is one aspect. The other aspect deals with the tastes of authors of the writings. When it esteems and tries to affirm average values, criticism shows its accommodation to the average in literature. On the other hand, thorough and concrete analyses are demanded, because writings without documentation sound either like praise or like insults.

It was also stressed at the meeting that literary criticism, in general, results from the critical thinking of writers, of those with a long creative experience, but also of young authors who must learn to be always active. The critical opinion of the creative workers has many advantages for writers and for literary development in general. It brings the writer face to face with the times and the work of his colleagues, with the tastes of his readers and with the requirements of contemporary development. Therefore, the participants at the meeting stressed that it is unpardonable for a writer, to write tens or hundreds of pages of literature in a year, and not to bother to write 5 to 10 pages of criticism about a literary issue, about the work of a colleague or about the work of a young writer. Especially in regard to the latter, there must not be any lack of concern because this is not only consideration, but also, first of all, concrete assistance.

The attitude toward creativity in the editorial staffs and institutions plays its role in literary artistic development. If editors, stage directors, and scenario writers do not keep in step with the requirements of the times and are not in the forefront of the progressive taste of the masses, then, they pave the way for an average level and, soemtimes, for mediocre works. On the other hand, practice shows that it is harmful to confuse the demands for high ideological and artistic quality with those with aiming at "being within safe limits," not to have trouble, as happens more often in staging theatrical productions. The meeting emphasized that backwardness in dramas and comedies has several causes. Our distinguished writers must get more involved in this field. However, this does not mean that we lack talented authors in this genre or that it is a "difficult" field. (What literary genre does not have its special characteristics and difficulties?) Sometimes,

its "difficulty" stems from the many "demands" made through certain links. For this reason, there are cases showing that some creative workers think that it is better to tackle a literary work than to undertake the staging of "Odyssey." This is a restraining concept; we must not tolerate it; it is important, however, to struggle against its causes.

The writer creates literature; outstanding and mediocre works, first of all, are the fruit of his creative work. Distinguished literary works are not written by the best editors and producers. However, their role is always noticeable on the artistic-ideological level. Therefore, it is necessary that the publisher, stage director, and scenario writer be as close to the writer as possible, encourage and help him with their progressive ideas, tastes, culture, and competent knowledge. In this regard, much still remains to be done.

To implement Comrade Ramiz Alia's guidelines, it is essential to have a broader and more intensive cooperation between the creative workers themselves, between experienced creative workers and talented young men and young women, between the Writers and Artists Union and the institutions and between the cultural and artistic institutions and the union. This cooperation has never been lacking. But, the issue is that it should be more intensive and dynamic, capable of using varied work forms, with living and fruitful activity, so as to successfully fulfill the requirements for ideological-artistic quality.

9150/6662

CSO: 2100/19

BRIEFS

AUSTRIAN-ALBANIAN DIPLOMATIC ANNIVERSARY--Tirana, February 12 (ATA)--On occasion of the 30th anniversary of the establishment of the diplomatic relations between the People's Socialist Republic of Albania and the Republic of Austria, the minister of foreign affairs of the PSR of Albania, Reis Malile, and the federal minister of foreign affairs of the Republic of Austria, Leopold Gratz exchanged telegrams of greetings. On this occasion they expressed their desires and wishes for the further development of the friendly relations between the two countries. On this occasion, too, the ambassador extraordinary and plenipotentiary of the PSR of Albania in Austria, Idriz Bardhi, gave a cocktail which was attended by functionaries at the premier office, the Ministry of Foreign Affairs, the Ministry of Trade, Industry, and Handicraft, the president of the Academy of Sciences of Austria, the chief editor of APA NEWS AGENCY, the chairman of Austria-Albania Friendship Association, etc. The reception passed in a friendly atmosphere. [Text] [Tirana ATA in English 0900 GMT 12 Feb 86 AU] /6662

ALIA ATTENDS CONCERT IN RRESHEN--Tirana, February 11 (ATA)--On occasion of the visit of Comrade Ramiz Alia, the amateur artistic ensemble "Mirdite" gave a festive concert in the house of culture and people's creativeness of the town of Rreshen on February 10. Present were vanguard workers and cooperativists, veterans, heroes of socialist labour, militarymen, youngsters and Enver's Pioneers. Those present welcomed with enthusiastic applause the entering into the hall of Comrade Ramiz Alia. Attending were also the member of the Central Committee of the Party Sofokli Lazri, the first Secretary of the District Party Committee Gjela Biba, the chairman of the Executive Committee of the district people's council Petraq Kalemi and other comrades. The amateur artists sang and danced for the party, Comrade Enver Hoxha, the happy life, the moral beautiful future. At the end of the concert, the amateur artists and all those present in the hall applauded and cheered powerfully for the party, its Central Committee with Comrade Ramiz Alia at the head. [Text] [Tirana ATA in English 0730 GMT 11 Feb 86 AU] /6662

CSO: 2020/85

PROSPECTS FOR 1986 SUMMARIZED

Prague RUDE PRAVO in Czech 30 Dec 85 p 1

/Article: "With Courage and Energy"

/Text/ Our society is entering 1986--the year of the 17th Congress and the 65th anniversary of the establishment of the Communist Party of Czechoslovakia --conscious of the magnitude of the tasks necessary to effect maximum continuous future development. Although there will be many opportunities to assess the work accomplished in the last electoral period, our main attention must be focused on the prospects ahead--on the tasks of 1986 and the whole Eighth 5-Year Plan.

It is good to draw encouragement for the work ahead from all that went well in the past; it is right to make use of all experiences that led to success. But it is no less necessary to analyze also the reasons for results that were not as good as expected and find the right approach so that future efforts will be more productive than former efforts. In any case, such a critical procedure is characteristic of the activity of our party in the last 15 years.

In order to provide for the further building of a developed socialist society, the results of the national economy are of paramount importance. They are critical for improving the living standard, enhancing the social security of the people and also for our input into the struggle to maintain and consolidate peace and the unity and strength of the socialist community.

In the coming days the general public will be informed of the main thrust of socioeconomic development in the Eighth 5-Year Plan which will be discussed and approved by the 17th Party Congress. The state plan for 1986 has a special position for achieving the basic aims of the Eighth 5-Year Plan. Its role is to ensure a smooth transition from the Seventh 5-Year Plan to the more demanding terms of the Eighth 5-Year Plan.

An increase of 3.5 percent in the national income is planned for 1986. To realize this it is necessary to make substantially better use of all intensifying factors. The plan to increase generation of the national income is primarily based on further reducing the amount of industrial

production for the net national product and accelerating the growth of labor productivity. This means that commercial organizations will have to reduce the costs of materials for output about twice as fast as they did in the last year of the Seventh 5-Year Plan.

With such a requirement, the fact is that in the years 1986-1987 as a result of low growth of assets, the strain in the fuel and energy balance will intensify. Consequently, it will be necessary to give prime attention to more efficient consumption of fuel and energy.

Consistent with the main objectives of the Eighth 5-Year Plan, the 1986 plan places emphasis on more rapid development of the progressive sectors of engineering, the electrotechnical industry and eligible chemistry. The basic requirement is to organize all production in accordance with its intended use, especially for export and the domestic market. In matters of investment, there will be a change in direction, toward the most important aspects of development of the economy in accordance with contemplated structural changes and the course of intensification. The volume of machinery and equipment will increase substantially while the volume of construction work will decline.

To fulfill the tasks planned for the first year of the Eighth 5-Year Plan calls for stepping up the application of R&D results to production especially but also to other areas. It is necessary for R&D to have a much greater impact on the creation of new products and technologies as well as cost effective utilization of raw materials, materials and energy.

In order to intensify the national economy by broad application of the results of R&D, it is essential to make maximum use of international socialist cooperation in the spirit of the Comprehensive Program of R&D Progress of the CEMA Member States to the year 2000 as well as our current bilateral programs with individual socialist countries, especially the Soviet Union. Only in this way is it possible to move ahead rapidly, expediently and efficiently and carry out the prescribed goals of economic development more effectively and reliably than before.

In international socialist cooperation it is essential to develop collaboration, specialization and integration on the basis of direct relations, cooperation not only between departments but also economic production units and their enterprises. By joining forces, making the best use of experience and knowledge we strive to increase technical and commercial parameters and the quality of products.

In 1986 we enter into the Eighth 5-Year Plan. Much depends on it being a successful entry on all fronts and with its high demands influencing all work and results during the entire upcoming period of the 5-year plan. It should, above all, bring about a distinct shift in the quality of all work, specifically in production where quality can be measured and controlled as well as in all other activities where quality depends on personal responsibility and discipline. Every author or collective should be able to sign his work knowing that it was the very best that human power could do.

Only by high quality work is it possible to create the conditions needed to attain the 1986 objectives of raising the living standard. Personal consumption is to rise by 1.9 percent and real personal income by 2.2 percent. Compared with development in the Seventh 5-Year Plan this is a considerably higher growth rate which will characterize the whole period of the Eighth 5-Year Plan. But it must be emphasized again that the given goals can be attained only on the basis of concrete results in the development of production, the creation of high quality goods, intensifying good management in all sectors and consolidating working, technological and financial disciplines.

The year 1986 will be a test of our preparedness to master the tasks of the whole 5-year plan. The tasks--as is apparent even now--are higher and more demanding, and that under more complicated conditions. Therefore it is essential to approach fulfillment of the new tasks with courage and energy, with determination not to retreat before any obstacle, not to evade any problem and not to give way to any weakness or misgivings.

In preparing for the 17th CPCZ Congress party organizations are becoming active and workers' collectives are making numerous pledges on the eve of the congress of the supreme party body. They unanimously express their determination to meet the increased tasks fully and honorably. The party greatly appreciates these expressions of initiative and believes they will develop even further and be directed toward broad and prompt application of the results of R&D to production, toward more efficient use of machinery and equipment, raw materials, materials and energy and toward high quality of work and products.

With courage and energy we enter into 1986, resolved to fulfill the prescribed goals and with new working successes on the eve of the 17th CPCZ Congress!

8491/12276

CSO: 2400/144

PLAN FOR CSSR SCHOOL SYSTEM REVIEWED

Prague RUDE PRAVO in Czech 19 Dec 85 p 5

/Article by Miloslav Dockal, candidate member of the CPCZ Central Committee and department head: "Significant Changes in the School System"/

/Excerpts/ At the present time, as the preparations of the communist party and of the entire society for the forthcoming 17th CPCZ Congress reach their peak, our educators are reviewing the fulfillment of the resolutions of the 18th CPCZ Congress and the new tasks facing socialist education. In this connection they are especially aware of the fact that our schools must meet the needs of socialism, serve the interests of the working class and other working people, and actively implement the programmatic goals of the Czechoslovak Communist Party. After all, the entire history of the party and especially of the period of building a developed socialist society after the 14th CPCZ Congress confirms that attention to the growth of the cultural and educational level of the people belonged and still belongs to the most important areas of the policy of the CPCZ and the socialist state.

So far the implementation of the program of the party's school policy has been reflected in a sharp rise in the cultural and educational level of the working people. The introduction of 10-year compulsory schooling for all our pupils has become an important step toward the further democratization of our educational system. This change as well as other changes in our educational system were spelled out in the University Law of 1980 and the law of 1984 concerning the system of basic and secondary schools.

The past period witnessed a positive development in preschool education. Our goal to have 90 percent of preschool children in kindergartens was exceeded by 7 percent. This arrangement has offered beneficial opportunities for the social development of young mothers. Just as important is the fact that in this way our children are better prepared for systematic education in regular schools.

The role and social function of the basic school has undergone a substantial change. With the introduction of 10-year compulsory school attendance, the basic school is now the fundamental vehicle for preparing all our youth for secondary school, where they receive concrete training for future careers. The new role of the basic school emphasizes the development of the thinking

and independence of pupils, the formulation of the scientific world view, and of their relationship with a socialist society, and the formation of their positive attitude toward work and education as important social values.

Also, the changes implemented in all three types of secondary schools are of basic significance. Their intent is to achieve an overall improvement in the work of academic secondary schools /gymnasiums/, secondary vocational schools, and secondary vocational training centers. These changes broaden the specificity of their mission and at the same time help to bring these three types closer to one another by increasing the academic role of secondary vocational training centers and secondary vocational schools, and at the same time by introducing technical education in the gymnasiums.

Especially significant in this respect is the improved work of the secondary vocational training centers. The modern understanding of the training of young workers justifiably emphasizes the general academic aspect and its more appropriate role in vocational training, and the more effective linkage between theoretical preparation and vocational training--in other words, the ability to acquire technical abilities and skills. Understood in this manner, the training of future workers conforms fully to the political role of the working class in a socialist society and the corresponding necessity of active participation by its future members in political and public life.

The past period saw the extension of the length of study and the modernization of its content at our universities. The purpose of this step has been to secure the training of highly qualified cadres with a relatively broad technical background in a given area. Emphasis is given to creative attitudes and the higher adaptability of graduates to the present and future needs of social practice.

Adult education has become an integral part of our educational system. Its goal is the upgrading of skills acquired in the past, greater specialization, or retraining.

During the Seventh 5-Year Plan, we continued primarily to build preschool facilities and basic schools, especially within the framework of our extensive construction program. At the same time, however, the building of other types of schools and school facilities was also done on a large scale. In the course of the past 5-year plan, the national committees spent Kcs 9.5 billion to build educational facilities. This money paid for the completion of 1,600 schools with 7,500 classrooms and 2,000 beds in youth hostels. In addition, we made 173 additions to the existing schools buildings valued at Kcs 750 million. We invested Kcs 2.25 billion in the universities. In this way, our universities acquired 87,000 square meters of new classrooms and laboratories, the necessary space for more student cafeterias for the additional 5,700 meals and 12,300 beds in the dormitories. The latter provide lodging for over 121,000 students which, for all practical purposes, satisfies all student demands for space in the dormitories.

From a number of comments which were made it is obvious that certain people involved in social activity have not yet accepted the idea that at any given

level of social development it is still not possible to think that the training of the graduate is completed at the moment he is presented with a diploma or other certificate attesting to his graduation.

It is imperative that the schools' efforts be followed up by the necessary attention of the ministries and individual organizations and institutions which must help to improve the qualifications of young workers, technicians, engineers, and other experts. The modern concept of a life-long education is, after all, not a mere theoretical thesis but a necessity.

This will not reduce but, on the contrary, increase the demand for the improved education and social responsibility of school graduates, their creative thinking, activity and initiative. Consequently, one cannot accept the fact that certain graduates of our secondary schools and universities look for their personal and professional fulfillment in mediocre and routine jobs, in the comfort of a godforsaken office, that they are afraid of difficulties and challenges which they must overcome, and that they do not care to work in demanding positions of our socialist construction. To discover the new laws of science, to experience the adventure of learning, to undertake conclusive creative effort in some seclusion and static comfort is and will remain difficult if not outright impossible.

The building of socialism, the linking of its advantages with the achievements of scientific-technical progress require from each and every worker sacrifice and courage, professional mastery and political awareness, a great deal of creativity but also a sense of collective work, humility and honesty. Only people with these characteristics can and will perform great deeds and achieve significant results.

Our schools, their teachers and other workers play a decisive role in the education of young people. The basic demand on a socialist teacher is his responsibility for the results of his work. This responsibility will grow with the further development of our school system.

The successful fulfillment of the tasks of the party's school policy depends to a decisive extent on the success of improving the effectiveness of communist education in the school and on the joint effort and cooperation of all social functionaries. The Marxist-Leninist world view of young people, their attitude toward their homeland and their international attitude, their attitude toward work and socialist ownership, and their moral and esthetic values and norms do not happen causally. Rather, they are formed gradually under the concrete conditions of life and work. The significance of the above is exemplified by adults.

Because of the above reasons neither the school and its personnel, nor the family, the national committees, the social organs and the organizations of the National Front, especially the Socialist Youth Union and its Pioneer organization, can remain indifferent to the problems which we face in the education of the new generation. The way to improve the system of education, to increase ideological and political awareness, the social activity and involvement of pupils and students is not only a theoretical but also a practical question.

For this reason it is necessary that every person, regardless of whether he works directly with young people or only influences them indirectly, must contribute to the uniform education of the future generation.

The acceleration of scientific-technical development under the conditions of socialist construction increases the demands on our entire school system. It means caring about improvement in the teaching of the modern math, natural sciences and technology; about applying the results of cybernetics, robotics, biotechnology and other progressive fields in the training of future workers, technicians, engineers and other specialists. To achieve a high effectiveness in this respect calls for making the scientific-technical revolution the real substance and work of the socialist school. It is necessary not only to reach electronics and computer technology but also to see to it that this and other areas of scientific-technical progress become the actual focus of the school activity of pupils, students, and teachers.

We are now witnessing the completion of the complex program of computer literacy in our educational system. After the appropriate discussions and approval by the governments, this will become a basis for the accelerated solution to these questions in schools and educational facilities.

In order to realize this goal, it is indispensable that we have enough computers, audio-visual aids and work programs; we also must in time train the necessary teachers. The basic training of teachers for work with computer technology is already being realized in diversified training courses.

Not even in the forthcoming Eighth 5-Year Plan can our school system do without further investments to secure the development of the material-technical base of education. Priority will be given to building all types of secondary schools, including youth hostels which will house the numerically large classes in the 1986-1990 period. Especially, the pertinent ministries must create more favorable conditions for the planned development of secondary training centers and more consistently pay attention to increase space which still lags behind our needs. In connection with the introduction of the 10-year compulsory school attendance it will help the construction of secondary vocational schools and gymnasiums if they will be viewed as part of civic needs within the framework of the construction of housing developments.

The development of the basic school system will aim at the construction of specialized workshops and classrooms. As far as the kindergartens are concerned, during the Eighth 5-Year Plan we will consider in most cases only replacements for outdated facilities. Special attention, however, must be given to further construction of schools in the countryside, children's homes, youth hostels as well as the network of arts schools and schools for youth requiring special care.

As far as the universities are concerned, our investment policy will concentrate on the improvement and expansion of the space needed for instruction, science and education, and on the completion of the network of school cafeterias and dormitories. Our basic target is to accommodate approximately 80 percent of the students in the dormitories by the year 2000 except in Prague and Bratislava, where the needs are lower.

By its increased attention to the solution of all pressing educational, cadre, organizational as well as material-technical questions, our communist party will systematically try to improve our entire school system with an eye on needs to accelerate the socioeconomic development of our society.

1277/12228

CSO: 2400/117

RCP'S STOIAN MEETS WITH CRAXI, OTHERS DURING ROME VISIT

Talks With Craxi

AU312104 Bucharest Domestic Service in Romanian 2000 GMT 31 Jan 86

[Text] On behalf of Comrade Nicolae Ceausescu, RCP secretary general and president of the SR of Romania, warm greetings and best wishes were extended to Bettino Craxi, secretary general of the Italian Socialist Party and chairman of the Council of Ministers of Italy, as well as wishes for success and prosperity to the Italian people.

Bettino Craxi expressed thanks and asked the Romanian guest to convey cordial greetings to Comrade Nicolae Ceausescu, as well as wishes for new successes and the expression of his special consideration.

The exchange of messages took place when Prime Minister Bettino Craxi received Comrade Ion Stoian, candidate member of the Political Executive Committee and secretary of the RCP Central Committee, who is visiting Italy.

The two sides exchanged views on the development of relations between the two parties, cooperation at various levels between Romania and Italy, and on certain aspects of the current international situation. Within this framework, the two sides expressed their desire to continue to develop relations between the RCP and the Italian Socialist Party and between Romania and Italy. Special attention was paid to expanding trade exchanges and economic cooperation between the two countries, and the broad opportunities offered by the economies of both countries were stressed.

Discussing certain aspects of the international situation, the two sides emphasized that the basic problem of our time is halting the arms race and proceeding to disarmament, primarily nuclear disarmament, and stressed the need to unite efforts of progressive and democratic forces, governments, and peoples for this purpose.

The RCP delegation led by Comrade Ion Stoian, which is visiting Italy at the invitation of the PCI, also had talks with Paulo Bufalini, member of the directorate of the PCI and chairman of the Central Auditing Commission; Gian Carlo Pajetta, member of the directorate and secretariat of the party

Central Committee; Luciano Magri, member of the party directorate; and Antonia Rubbi, member of the party Central Committee and chief of the foreign relations section.

The Romanian delegation also met with the leadership of the Gramsci Institute and of the Study Center for International Policy and paid a visit to the Federation of the PCI in Rome.

During the visit and talks, the two sides briefed each other on the activity and concerns of the two parties. Special attention was paid to certain aspects of the current international situation and of the communist and workers movement. The sides stressed the desire of both parties to intensify contacts and to develop ties in the interest of the two parties, countries, and peoples.

Meeting With PCI Leader Natta

AU011728 Bucharest AGERPRES in English 1630 GMT 1 Feb 86

[Text] Rome, AGERPRES 1/2/1986--Alessandro Natta, general secretary of the Italian Communist Party, received a delegation of the Romanian Communist Party headed by Ion Stoian, alternate member of the Executive Political Committee, secretary of the CC of the RCP.

From Nicolae Ceausescu, RCP general secretary, a warm salute and best wishes of good health and success were conveyed to the general secretary of the Italian Communist Party, Alessandro Natta, and wishes of new achievements in the party's activity.

Alessandro Natta thanked for the message and asked that Nicolae Ceausescu be conveyed a cordial salute and best wishes of good health and personal happiness from himself and the direction of the Italian Communist Party.

During the talks, both sides expressed satisfaction at the growing evolution of the relations of friendship, collaboration and solidarity between the RCP and the PCI. Stress was laid on the joint resolve to intensify and expand more these relations, on the basis of mutual esteem and respect, of full equality, in the interests of the two peoples, of the friendship between Romania and Italy, of the general cause of social progress, of socialism, detente, security and peace the world over.

Information was exchanged on the situation in the two countries, on the current and long-term concerns and targets of the two parties.

The exchange of views on the international situation evinced the two parties' identical or similar positions on the major problems of the evolution of the contemporary world, of the struggle for detente, disarmament, nuclear disarmament in the first place, for the ensurance of peoples' right to existence, peace and life.

Received by Spadolini, Others

AU011733 Bucharest AGERPRES in English 1638 GMT 1 Feb 86

[Text] Rome, AGERPRES 1/2/1986--Giovannina Spadolini, secretary-general of the Republican Party of Italy [PRI], received Ion Stoian, alternate member of the Executive Political Committee, secretary of the CC of the RCP. On the occasion from Nicolae Ceausescu, RCP general secretary, president of Romania, a message of cordial salute was conveyed to the secretary-general of the Republican Party of Italy.

Giovanni Spadolini thanked and asked that Nicolae Ceausescu be conveyed a cordial salute.

During the talks aspects were approached related to the current activity and concern of the two parties, as well as problems of the international life.

Stress was laid on the evolution of the fine relations of friendship and collaboration and the RCP and the PRI and the wish was expressed to work for the intensification of their links and of the Romanian-Italian relations in policy, economy, technics and science, culture and other fields of activity.

Giorgio la Malfa, deputy secretary-general of the PRI, chairman of the Foreign Policy Commission of the Chamber of Deputies of Italy, attended the interview and talks.

While in Italy, the RCP delegation headed by Ion Stoian, alternate member of the Executive Political Committee, secretary of the CC of the RCP, also met and conducted talks with Senator Fabio Fabbri and Deputy Angelo Cresco, members of the Directorate of the Italian Socialist Party, and Filippo Fiandrotti, secretary of the Chamber of Deputies.

/6662

CSO: 2020/87

CEAUSESCU RECEIVES NORWEGIAN AMBASSADOR'S CREDENTIALS

AU311641 Bucharest AGERPRES in English 1530 GMT 31 Jan 86

[Text] Bucharest AGERPRES 31/1/1986--January 31, President Nicolae Ceausescu of Romania received Knut Erling Sagen, who presented his credentials as ambassador extraordinary and plenipotentiary of Norway to Romania.

Handing over the credentials, the ambassador conveyed President Nicolae Ceausescu choice greetings from his Majesty Kong Olav V of Norway.

In the ambassador's address stress is laid on the Norwegian Government's satisfaction at the evolution of the relations between Norway and Romania, as well as on its resolve to further work for the continuous strengthening of these relations for the development of the Norwegian-Romanian cooperation in domains of common interest. Emphasis is also placed on the decisive importance of the official visit paid by Romania's president to Norway in 1980 for the development of fine relationships between the two countries.

On receiving the credentials President Nicolae Ceausescu thanked for the feelings expressed and also conveyed cordial wishes to the King of Norway, and wishes of progress and prosperity to the friendly Norwegian people.

In the Romanian head of state's address of reply the positive evolution of the relations of friendship and collaboration between Romania and Norway is assessed in the positive and it is stressed that Romania attaches special importance to the development of the Romanian-Norwegian collaboration and cooperation, in keeping with the two countries' economic potential, which allows for a more marked increase of economic, technico-scientific and cultural exchanges and exchanges in other domains. Fine conditions are shown to exist for Romania and Norway, two European countries, to develop a fruitful cooperation at the Stockholm Conference and at the UN for the settlement of the major issues confronting our continent, for understanding, security and peace the world over.

Stress is also laid in the address on Romania's resolve to steadily work for the promotion of cooperation and security in Europe, for the development of a broad cooperation internationally, without obstacles and discriminations, for the eradication of underdevelopment and the building of a new world economic order, for the achievement of disarmament, for the safeguarding of security, cooperation, and peace throughout the world.

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CEAUSESCU RECEIVES ECUADORAN AMBASSADOR'S CREDENTIALS

AU311618 Bucharest AGERPRES in English 1525 GMT 31 Jan 86

[Text] Bucharest AGERPRES 31/1/1986--President Nicolae Ceausescu received on Friday, January 31, Filoted Samaniego Salazar, who presented his credentials as ambassador extraordinary and plenipotentiary of the Republic of Ecuador to Romania.

Handing over his credentials the ambassador conveyed Nicolae Ceausescu the cordial salute of the president of the Republic of Ecuador, Leon Febres Cordero Ribadeneyra, and the Romanian people wishes of progress and welfare.

In his address, the ambassador highlighted the fine links between Romania and Ecuador and expressed the wish to further develop the cooperation between the two countries in various areas of activity, as well as Ecuador's concern to cooperate closely with Romania on an internal [as received] plane.

Receiving the letters of credence, President Nicolae Ceausescu thanked for the message and conveyed the president of Ecuador a warm salute.

In his address, the Romanian head of state highlighted the wish to expand and diversify bilateral cooperation between Romania and Ecuador--economically, politically and in other fields of mutual interest--starting from the existing favorable conditions, to further work for the implemenetation of the understandings reached during the Romanian-Ecuadoran summits, of the provisions of the bilateral documents in force.

Socialist Romania, he said, is deeply interested in developing broad collaboration and cooperation with all the states of the world in the fight for progress and peace. In this framework, Romania works for the strengthening of friendship and collaboration with the Latin American countries, with the developing and non-aligned countries. The Romanian head of state also showed [as received] that the fundamental questions of the international life were the cessation of the arms race and the achievement of a passage to disarmament, to nuclear disarmament in the first place, and stressed that everything possible should be done to prevent a nuclear disaster, to safeguard the people's foremost right to life, peace, free and dignified existence.

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DECREE ON WEAPONS, AMMUNITION AMENDED, SUPPLEMENTED

Bucharest BULETINUL OFICIAL in Romanian Part I No 4, 21 Jan 86 p 2

[Council of State Decree Amending and Supplementing Decree No 367/1971 on the Handling of Weapons, Ammunition and Explosive Materials]

[Text] The Council of State of the Socialist Republic of Romania decrees:

Article I--Decree No 367/1971 on the handling of weapons, ammunition and explosive materials, republished in BULETINUL OFICIAL Part I No 21 of 8 March 1976, is amended and supplemented as follows:

1. Letter e¹), with the following content, is inserted in Article 2 after letter e):

"e¹) prop weapons, which are firearms which have been transformed or adapted so that they can be used only with blank ammunition, which are intended for use in the artistic and production activity of the "Bucuresti" Cinematographic Production Center, the Bucharest State Circus and the theaters."

2. Article 17, letter d) will have the following context:

"d) is in the situation described in Article 32, paragraph 3;"

3. Article 24, paragraph 2 will have the following content:

"The Romanian Shooting Federation and the Economic Enterprise for the Management of Bucharest Sports Grounds can organize, with the approval of the National Council for Physical Education and Sports, familiarization courses or training courses in various types of marksmanship; such as air rifle, bullet, trap, skeet, wild game and live pigeon shooting, for foreigners who are in the Socialist Republic of Romania, with payment in hard currency, as well as for Romanian citizens, with payment in lei."

4. Article 26 will have the following content:

"Article 26--Cultural and art institutions, as well as cultural-artistic and sports associations, can have panoply weapons in their possession which they are obliged to register with the militia organs."

The "Bucuresti" Cinematographic Production Center, the Bucharest State Circus and the theaters can possess and use prop weapons which they are obliged to register with the militia organs.

The necessary prop weapons can be obtained from the Ministry of National Defense and the Ministry of the Interior, from the supply of weapons which are no longer in use. The necessary blank ammunition can be obtained from the producing enterprises and from the Ministry of National Defense and the Ministry of the Interior.

The possession of panoply weapons which are in operating condition or of prop weapons by the socialist organizations specified in paragraphs 1 and 2 is permitted only on the basis of an authorization which is issued by the Bucharest Municipality militia or by the militia of the country in whose territorial jurisdiction these organizations have their headquarters, under the conditions stated in AVticle 10 which are applied appropriately."

5. Article 32, paragraph 3 will have the following content:

"The persons specified in paragraph 1 must hand over their pistols to the appropriate organs when they become members of the reserve or when they retire."

6. Paragraphs 4 and 5 of Article 32 are abrogated.

7. Article 54 is supplemented by a new paragraph with the following content:

"Weapons belonging to the Romanian Shooting Federation and to sports clubs and associations with marksmanship sections, which are no longer used for competition, can be used by individuals and juridical entities which have a right to possess them, with the exception of weapons with 5.6 mm caliber bullets which can be used only by authorized juridical entities."

Article II--Within 30 days of the application of this decree, the General Inspectorate of the Militia will draw up norms for its application, which will be approved by the minister of the interior.

Nicolae Ceausescu
President of the Socialist Republic of Romania

Bucharest, 20 January 1986

No 18

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CSO: 2700/93

BRIEFS

TEODOR COMAN VISITS IRAQ--Baghdad, AGERPRES 3/2/1986--Teodor Coman, chairman of the People's Councils Affairs Committee of Romania, who pays a visit to Iraq invited by the local government minister, was received by Taha Yasin Ramadan, member of the Revolutionary Command Council, Iraqi first deputy premier. On the occasion, high appreciation was shown at the development stage of the manysided ties between Romania and Iraq and the joint wish was expressed to boost them, also at the level of the two institutions concerned with local administration questions, in keeping with the understandings set at top level. Teodor Coman also met with Hasan 'Ali, member of the Revolutionary Command Council, with the local government minister, with Iraqi province governors. [Text] [Bucharest AGERPRES in English 1734 GMT 3 Feb 86 AU] /6662

TRANSPORTATION NORMALIZING AFTER SNOWFALLS--Bucharest, AGERPRES 4/2/1986--Things went back to normal in the wake of the steps taken in the southern and eastern parts of Romania that have been under heavy snowfalls in the last few days. At present, railroads and railway installations are no longer affected by weather conditions. As for road traffic, it is disrupted on several national road sections in the southern part of the country. Traffic is difficult on a number of roads in southern Muntenia and Oltenia. First-lane two-way traffic is possible on the Bucharest-Pitesti motorway. Operations are in full progress to clear the roads that were closed to traffic. Freight and passenger road transport is affected in several counties in Muntenia and Oltenia. Activities are carried on in normal conditions in all the Romanian Danubian ports, with the exception of the ports at Bazias, Moldova Veche, and Svinita, where activity is hindered by a rough wind. The situation went back to normal in the port of Constanta. All airports are opened to traffic. Postal and telecommunications installations operate normally. [Text] [Bucharest AGERPRES in English 1923 GMT 4 Feb 86 AU] /6662

CASTRO'S THANKS FOR ANNIVERSARY MESSAGE--To Comrade Nicolae Ceausescu, RCP secretary general and president of the SR of Romania. On behalf of our people, of the Communist Party and the Government of the Republic of Cuba, I send you most sincere thanks for the fraternal message of greetings you sent us on the occasion of the 27th anniversary of the victory of the Cuban revolution. Fidel Castro Ruz, first secretary of the Central Committee of the Communist Party of Cuba and president of the Council of State and of the Government of the Republic of Cuba. [Text] [Bucharest SCINTEIA in Romanian 26 Jan 86 p 7 AU] /6662

JAPANESE CP LEADERS 'THANKYOU'--To Comrade Nicolae Ceausescu, RCP secretary general. Dear Comrade, We thank you for the cordial greetings you sent to us on the occasion of our election by the first plenary session of the 27th congress in the functions of chairman of the Central Committee and of the chairman of the Presidium of the Central Committee of the Japanese Communist Party. We wish you full health and success in your activity. With communist greeting, Cenji Miyamoto, chairman of the Central Committee; Tetsuzo Fuwa, chairman of the Presidium. [Text] [Bucharest SCINTEIA in Romanian 24 Jan 86 p 5 AU] /6662

REFUGEES ARRIVE NETHERLANDS--Amsterdam, Feb 11 (AFP)--Thirty-nine Eastern European refugees, mostly Romanians, persecuted in their own countries for political, religious or ethnic reasons, arrived here today from Yugoslavia, an official spokesman said. The refugees were accepted here temporarily as a first stage towards resettlement in the West, at the request of the Geneva-based UN High Commissioner for Refugees Office, which arranged their travel in agreement with the Belgrade authorities. [Text] [Paris AFP in English 2028 GMT 11 Feb 86 AU] /6662

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